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June 1947

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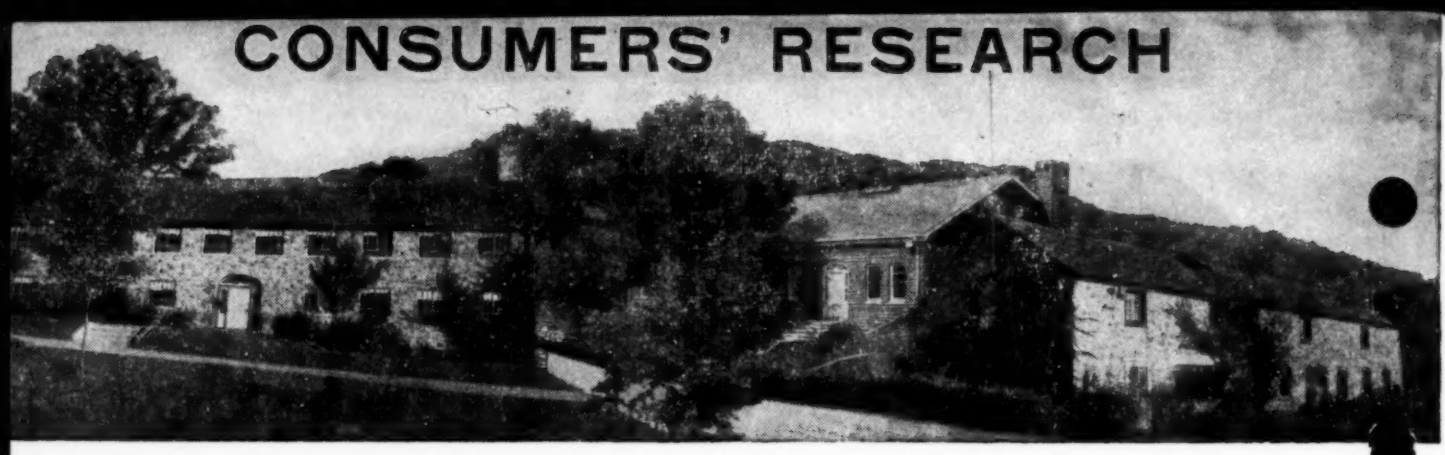

Vol. 19 • No. 6 **BULLETIN** June 1947

Off the Editor's Chest

HIGH prices and the high cost of living are the burden of every homemaker's complaint these days. Even the politicians are coming out publicly against the h.c. of l., and looking around for someone to blame. Up to the present time, however, no concrete steps have been taken to reduce or eliminate basic cost factors which contribute to the present price levels. Retailers and manufacturers for the most part do not wish to cut their present margins of mark-up. Since they cannot tell what the next wage demands will be and how the government will decide the unions' claims, if a strike is called, they are hardly to be blamed for wanting to hold on to present levels as long as customers will buy. Organized labor not only refuses to consider an increased output per man-hour, but demands shorter working hours and higher pay, as a matter of principle and "practical union leadership."

The Administration in Washington, which has been holding earnest conferences on the need for lowering prices, not only declines to press for lower taxes, but has actually used every resource of propaganda and pressure at its command to block congressional action toward reduction of income and excise taxes—one of the consumer's heaviest and most burdensome outlays.

The consumer as usual pays and pays, although there are signs that the time-honored method of refusing to buy products that are considered too high-priced is gradually having its effect, in some cases, in bringing prices down. It is a far simpler matter to register a complaint against the high prices charged for commodities and services than to protest against taxes, such as those on gasoline, to choose an outstanding instance. Yet taxes are one of the important factors contributing to the high prices of many commodities. Consider, for example, that if the so-called luxury tax on cosmetics were repealed, a lipstick which now sells for $1.20 would cost $1, a price cut of over 16 percent. The woman who planned to spend $150 on a warm, long-wearing mouton fur coat only to discover that she must lay out an additional $30 to cover the federal excise tax, would be able to make a sizable saving in the clothing item of her cost-of-living budget were the Administration to eliminate such taxes, instead of merely holding cabinet conferences on the subject of the excessive charges *business firms* make for their goods and services.

In these days, when it is the fashion to express great concern over the right of the American workman to maintain his standard of living, it is illogical to the point of hypocrisy for the federal government to collect a tax of 10 percent of the manufacturer's price on electric, gas, or oil hot-water heaters and stoves, mechanical refrigerators, radios, and other articles that in this country are considered household necessities.

Perhaps one reason why there has been comparatively little rebellion as yet against excise taxes is that most people are not account-minded. The amounts collected are "a little here and a little there" and few take the trouble to add up the total sum they pay in taxes on their purchases of bus, railway and theater tickets, gasoline, cigars

(Continued on page 21)

Scientific and Technical Experts and Editors: F. J. Schlink, R. Joyce, M. C. Phillips, Helen P. Alleman, A. R. Greenleaf, and Charles L. Bernier. Editorial Assistants: Mary F. Roberts and B. Beam.

Symbols used to indicate sources of data and bases of ratings: A—recommended on basis of quality; AA—regarded as worthy of highest recommendation; B—intermediate with respect to quality; C—not recommended on basis of quality; cr—information from Consumers' Research's own tests or investigations; 1, 2, 3—relative prices, 1 being low, 3 high. Note that price and quality are completely differentiated in CR's listings; **a quality judgment is independent of price**; 46, 47—year in which test was made or information obtained or organized by the staff of Consumers' Research.

It will be advantageous if you will, whenever possible, send prompt notice of change of address at least a month before it is to take effect, accompanying your notice with statement of your old address with name in full. At least three weeks' notice must be given in any case. This rule, however, regarding long advance notice does not apply to military personnel.

¶CR will, of course, gladly change addresses for men and women in the services as often as required by changes in station and other circumstances.

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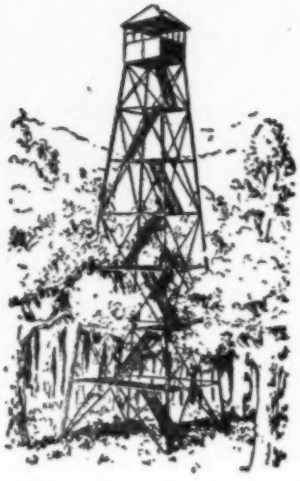


The Consumers' Observation Post

LEMON JUICE AND GRAPEFRUIT JUICE taken regularly have the unhappy effect of softening the enamel of the teeth, according to recent researches. Orange juice, it appears, is less acid and is considered safe, if drunk not more than once a day. The prevalence of tooth decay is indicated by a report from the council on Dental Health of the American Dental Association that 50 percent of 2-year-old children examined have one or more decayed teeth. Restraint in the use of acid fruit juices should also be extended to confections and sweetened beverages. The A.D.A.'s Council on Dental Health quite emphatically urges a reduction in the consumption of refined sugars as a means of reducing dental decay and points out that the effectiveness of brushing teeth as a factor in preventing decay has not been established. Indeed, one dental expert holds that brushing teeth whose surfaces have been softened by overuse of citrus fruit juices with a stiff brush or gritty toothpaste or powder may actually cause serious damage.

* * *

SURPLUS RADIO EQUIPMENT is plentiful on the secondhand market. Some of the items available, finely-tooled products of precision machine production, sell for a few cents; nevertheless, even the mechanical or electrical expert will have difficulty thinking up any useful purpose to which they can be put. In fact, one bold trade journal editor raises the question as to whether there was any need for making some of these items in the first place. Since the manufacturers were sworn to secrecy, they were unable to find out what military purpose particular items were intended to be used for, and now that the wartime ban on such questions is off, they are still wondering why some of the stuff was built at all at a time when metals and manpower were at a premium.

* * *

HOME OWNERS WITH AMPLE COAL BINS are advised to have them filled this summer. Coal may be scarce next winter, according to the head of one Pennsylvania coal company. The exporting of coal to Europe and scarcity of other fuels are the contributing causes of the shortage. Until the government clamped on wartime coal controls, thrifty consumers were accustomed to filling the coal bins in the summer when coal trucks were not so busy with pressing demands. It is a custom that needs to be revived.

* * *

TINCTURE OF IODINE presently available in drugstores will be milder and less likely to burn. The U. S. Pharmacopoeia now recognizes that a 2 percent solution is just as efficient as an antiseptic and a germicide as the former strong solution. CR has for years recommended the use of a milder type of iodine than the 7 percent solution.

* * *

FRESH PORK must be thoroughly cooked to be safe eating, as CR and others have warned from time to time. In spite of extensive warnings about the dangers of trichinella infection from raw pork, 84 cases of trichinosis, chiefly from consumption of an uncooked type of pork sausage, were found in New York City alone in January and February 1945. (Reports of these cases are just now appearing in the medical press.) The infected pork products were all traced to one wholesaler. Fortunately there were no fatalities.

* * *

POOR SOILS produce crops that are seriously lacking in essential vitamins, minerals, and proteins as compared with those grown on fertile soils. Human beings and animals raised on such foods exclusively will be more susceptible to

physical deficiency, weakness, and even disease than those who obtain foods from regions where the soil is rich or has been properly fertilized. It is possible, however, to compensate for such deficient foods to some extent by careful selection. In one section of South America where heavy rainfall had leached out the soil, Dr. Hans Jenny, of the University of California College of Agriculture, found that the people of the region were strong and had good teeth. Apparently they compensated for the poor products of their soil by eating a considerable amount of freshly caught fish from the numerous near-by rivers and streams.

* * *

HOW LONG IS A LIFETIME is a question that every consumer should have answered in writing when he buys an object guaranteed for that length of time. The St. Louis Better Business Bureau wisely points out that such a guarantee is only as good as the person who gives it. "Lifetime" guarantees, for example, on mechanical devices that cannot possibly last a lifetime are obviously in a class with bait advertising; at their best, misleading, at their worst, outright frauds. The Bureau calls attention to the fact that a general guarantee which does not define the conditions and limitations applying actually means nothing when the purchaser tries to collect on it.

* * *

REGULATION OF HIGHLY FLAMMABLE FABRICS on which legislation is pending in Congress and various state legislatures is causing considerable excitement in the trade. Fabric testing bureaus, according to Men's Wear, are doing a rushing business determining what textiles are flammable and what are not. The magazine reports that types known to be dangerous include napped, piled, or brushed rayon; some varieties of cotton flannel, chenilles, marquisettes, voiles, chiffons, nets treated for stiffening, and several other fabrics. Efforts are being made in some quarters to give fire-resistant finishes to certain highly flammable fabrics.

* * *

TOMATOES AND POTATOES in the northern part of the United States are threatened with an attack of a fungus blight like that which hit the northeast last year. It appears to be moving up along the coast from Florida where it was very bad this year. Gardeners should get in touch with their county agricultural agents and experiment stations for advice on how to deal with the disease, for spraying must be done before the plants are affected. Bordeaux mixture and dithane have been found effective.

* * *

FROZEN FRUITS AND VEGETABLES which are of good quality more nearly approximate the flavor of fresh products than those preserved by any other method. In recent years, however, something seems to have happened to frozen peas, particularly those commonly served in restaurants, which are found to be almost invariably hard and tasteless. Peas have long been a popular vegetable, but if the present quality is not improved they are likely in time to be relegated to the position of parsley, as a bright green decorative touch on a diner's plate. Investigation as to the causes of this lack of flavor in frozen peas, reported by the U. S. Department of Agriculture, reveals that tardiness in getting peas from the field to the processing plant is chiefly responsible for flavor deterioration. In warm weather a delay of two hours noticeably reduces flavor quality.

* * *

SITTING WITH THE LEGS CROSSED has been considered harmless, though somewhat inelegant at times. Recent studies reported in the Journal of the American Medical Association, however, indicate that serious injury to the peroneal nerve sufficient to cause disablement may result from prolonged tension of this position. Eight cases of peroneal paralysis in men in the armed forces were traced to their habit of sitting with legs crossed for considerable lengths of time in their off-duty periods, coupled with cramped positions required when they were on duty servicing airplane gun turrets and other parts of fighter craft, acting as artillery observers which required maintaining a crouching position much of the time, and sending and receiving radio messages while sitting with legs crossed and wedged beneath a table top. It was observed that all eight patients studied were tall, relatively thin, and long legged.

(Continuation of this section is on page 37)

A Study of Juice Extractors

PROBABLY everyone who has ever squeezed several oranges every morning for any considerable period has his own ideas of what an ideal juicer should be like. Certainly it should be easy to use and easy to clean; to be economical in use, it must extract the greatest possible percentage of juice from the fruit; it should be so designed that no seeds are deposited when juice is poured from the container to the glass; since some want their juice well strained and others like a fair amount of pulp, choice of a juicer with respect to amount of pulp in the juice must be regarded as a matter for the individual to decide.

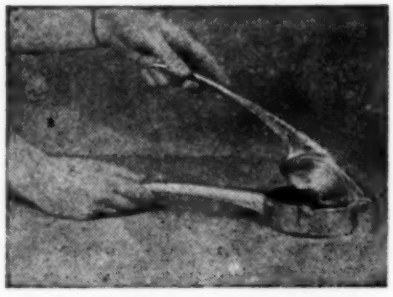


Figure 1—*Ebaloy Juice-All.* Presser type juice extractor. Halved fruit is placed over hemispherical dome in base and juice is pressed out by bringing handles together.

Juicers are gradually coming into good supply in the retail markets, and it was possible to obtain eight brands for the purposes of CR tests. Four of these were of the presser type (Figure 1), two were reamers (Figure 2), and two were squeezers (Figure 3).

These were carefully tested to determine comparative ease of operation, amount of juice and pulp extracted, ease of cleaning, and time required for juicing each orange.

Ease of operation was given the greatest weight in ranking, and for the purposes of this report was regarded as including not only the physical effort required to operate the juicers but also such related characteristics as avoidance of tipping, dripping, squirting, jamming, and any other details of performance which could irritate the user or require the expenditure of extra time during the juicing operation or after.

Efficiency in extracting juice was judged next in importance in ranking the juicers. This was determined by weighing the oranges before juicing and after, and determining the percentage of material (juice and pulp) removed. In arriving at the final figures in this test, results of two groups of tests on each extractor were averaged, the first tests being made on oranges practically free of seeds and pulp, the second group of tests on oranges with more pulp.

Speed of juice extraction is an important consideration in judging a juicer's effectiveness. The time in seconds required to extract the juice from one orange was calculated for each juicer from the time required to juice the six oranges used in the first extraction test and the five oranges used in the second. The relative length of time required by each juicer to extract a given quantity of filtered juice was also determined.

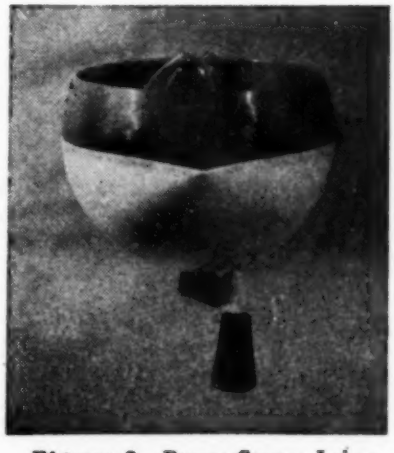


Figure 2—*Dasey* Super Juicer. Reamer type juice extractor.

The percentage of pulp produced was calculated by filtering the juice obtained in the second set of juicing tests, as the amount of pulp in evidence in these tests was much greater than in the tests of the first group. Although given less weight in the ratings than any other characteristic considered, the performance of each juicer with respect to amount of pulp produced has been noted in the listings for the information of prospective purchasers.

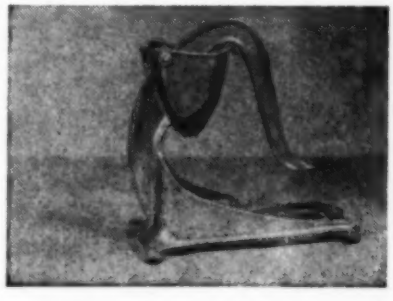


Figure 3—*Wear-Ever*, No. 3350. Squeezer type juice extractor. Halved fruit is dropped into receptacle and squeezed.

The engineering examination indicated that some juicers left much to be desired in the way of design, construction, and materials used. The defects were of a minor character in the

better juicers, but some of the juicers showed more serious faults. The two worst juicers in the test from an engineering standpoint were the *Kitchen Prince* and the *Handy Andy*. The *Kitchen Prince* juicer, on the whole, gave the impression of poor construction and unsuitable design. In the *Handy Andy*, the tubular supporting posts were of aluminum swaged into a base made of a sheet of the same material. The play in joints that should have been firm and remain so permanently, and the thinness of the sheet metal were regarded as indications of probably poor durability.

With the exception of the *Dazey*, which was intended to be attached to a wall bracket, and the *Ebaloy*, which was used like a nutcracker, all the juicers were designed to rest on a working surface while in use.

Ratings are cr47.

A. Recommended

Ebaloy Juice-All (Ebaloy, Inc., Rockford, Ill.) $2.75. Presser type. Aluminum-alloy castings form a large "nutcracker," the handles of which are pressed together to squeeze juice from fruit. Ease of operation, good. Efficiency in juice extraction, very good. Pulp content, about average. Very easy to clean. Action, slower than average. The only juicer in the group tested which could be stored in ordinary kitchen cabinet drawer. **2**

Dazey Super Juicer, Model 100, Plastic (Dazey Corp., St. Louis 7) $3.25. Reamer type for use with wall bracket. Ease of operation, excellent. Efficiency in extracting juice was very good, but pulp content was highest of juicers tested. Moderately easy to clean. Time for juicing, about average. **3**

Wear-Ever, No. 3350 (Aluminum Cooking Utensil Co., New Kensington, Pa.) $3.45. Squeezer type. Sturdy base and juicing cup were integral; presser plate and lever, used for juicing, also of one piece; rubber feet keep base from sliding on table surface. Ease of operation, good. Efficiency in extracting juice, somewhat below average. Pulp content of juice, below average. Very easy to clean. One of fastest of juicers tested. **3**

B. Intermediate

Crest Juicemaker (Midwestern Manufacturing Co., 28 N. Clinton St., Chicago 6) $1.73. Presser type actuated by rack and pinion, crank operated. Tended to be top-heavy. Tedious and inconvenient to use; filter clogged easily and juice cup flooded; seeds piled up and stopped

★ ★ ★

Camfield Automatic Toaster (Second Report)

WE present here the final results of tests made on the *Camfield* Automatic Toaster, a preliminary report on which appeared in the April 1947 BULLETIN. As noted in the previous report, the first sample of this brand purchased was damaged in the proof-voltage test so that performance tests could not be made. The replacement sample proved to be thoroughly satisfactory electrically and was given the series of tests described in the April BULLETIN.

B. Intermediate

Camfield (Camfield Mfg. Co., Grand Haven, Mich.) $19.95. Current leakage within accepted limits. Satisfactorily withstood proof voltage. Rated wattage not shown on name plate; actual wattage 1170 at 118 volts. Temperatures of all parts which might be touched, well below accepted safe limits (130°F for metallic, 160°F for non-metallic parts) after a half-hour period of actual toasting operations. In actual use tests there was no browning at the "Light" setting; toasting was very light and uneven at the "Medium" setting and was uniformly dark but with edges slightly charred at the "Dark" setting. **3**

operation. Efficiency, very good. Proportion of pulp, less than average. Moderately easy to clean. Action, slower than average. **1**

Juice-O-Mat PR63 (Rival Mfg. Co., Kansas City, Mo.) $4.98. Presser type. Metal and plastic construction, with rubber feet to prevent sliding. Operation, somewhat difficult. Efficiency, very good. Pulp content, less than average. Harder to clean than juicers in *A* group. Action, slower than average. **3**

C. Not Recommended

Handy Andy (Handy Andy Specialty Co., Inc., Long Island City, N. Y.) $1.69. Reamer type. Possibly a wartime product, which served its purpose when better juicers were not available. Hard to use and did not have a desirable degree of rigidity. Efficiency, fair. Pulp content, greater than average. Very hard to clean as pulp became interlaced in the interstices of the fins of the reamer. Action, much slower than average. **1**

Kitchen Prince (Sold by Goldman Equipment Corp., 652 Broadway, New York City) $3. Squeezer. Although only easy to moderate pressure was necessary for the actual juicing operation, weaknesses of design made this a difficult juicer to use; large amounts of pulp were removed, which clogged drain holes, got in front of presser and had to be lifted out before further operation was possible; oranges stuck to cup and presser causing cup to come unhooked; rind frequently split, with squirting of juice. Efficiency, below average. Pulp content of extracted juice, next to lowest of juicers tested. Moderately easy to clean. Design was not considered satisfactory. **2**

Big Squeeze Combination Juice Extractor and Ice Crusher (Ulmer Engineering and Mfg. Co., Hollywood 28) $6.93. Presser type, made of aluminum castings. Designed to juice whole fruit; inside of cup provided with six equally spaced sharpened ribs which unite in center and rise to form an impaling point. Rather difficult to use; considerable pressure required to impale fruit and extract juice; fruit often burst; in that case, juice squirted. Efficiency, below average. Pulp content, least of juicers tested Very easy to clean. Action, faster than average. **3**

Innerspring Mattresses

THE approval on November 1, 1946, of a national standard for filling materials used in bedding and upholstery represented a potentially important milestone for consumers. As pointed out in CR's June 1941 Bulletin, the purchaser can't examine the interior of a mattress without spoiling the "container" and must therefore rely on information supplied by the producer. Since the first bedding standards laws were passed in 1900, approximately three-quarters of the states have passed some sort of labeling legislation, and a few have enforcement officials who work with some effectiveness. These laws, though more or less uniform in theory, varied widely in details, creating great difficulties for the larger manufacturers, who shipped much of their output across state lines. They could plan to meet the most stringent requirements as to materials, but in spite of that, there was the possibility that their white-labeled mattresses or quilted pads might be barred from sale in a state that required an orange label or a white label of a different size.

The confusion increased until in 1936 the National Association of Bedding and Upholstery Law Enforcement Officials was formed, having as its objective the obtaining of uniform bedding legislation for the country as a whole. The officials' organization appealed to the American Standards Association which undertook the work in 1940. The war, of course, put a stop to standardization activities in this field, but in the fall of 1945 a preliminary set of definitions was widely circulated among those interested. The standard in its final form was published in the fall of 1946 under the title *Definitions (Including Tolerances) for Filling Materials for Bedding and Upholstery*. Development of uniform labeling provisions is planned and in progress. In time it will no doubt come to pass that a New Jersey purchaser will get the same material as an Ohio buyer, whenever the information on the labels corresponds.

Innerspring mattresses usually consist of a spring layer covered with a protective layer of sisal or jute material and top and bottom pads of cotton felt. In mattresses made before the war, these pads were sometimes of hair, wool, or air-foamed rubber, but these materials have not yet become available in post-war production. The steel spring elements of the mattress may consist (1) of many small, separate cloth-pocketed coil springs, or (2) of coil springs either woven together in a single unit or tied together with metal clips or helical springs.

Although several well-known brands were not available when mattresses were purchased for test some months ago, it was possible to obtain seven samples. These were given a critical examination to determine adequacy of side construction, method of tufting, method of ventilation, and suitability of handles; the ticking materials were subjected to the standard breaking load test; quality of the cotton felt pad was judged by its cleanliness; and the probable durability of the jute or sisal pads was determined by the ease with which the material could be pulled apart. Greatest weight in the ratings was given to the quality of construction and to the results of the durability tests. Durability tests were carried out on a mattress-testing machine which subjected the mattress to the action of a 270-pound roller moving across the mattress and causing the springs to compress and expand repeatedly. In each case the machine was stopped at a given number of single passes of the roller, a hole was made in one corner of the mattress, and a light was inserted; the number of broken coils was noted as accurately as possible. The test was then continued until each mattress reached the point where it appeared to be of no

further use so far as serviceability was concerned. It was then dissected and the exact number of broken springs was counted. From this it is evident that the numbers for broken springs indicating first failure that are shown in the listings are only approximate; the numbers counted at the end of the test are accurate. The quality of the construction of the springs was determined when the mattresses were dissected at the conclusion of the durability tests.

Well-tailored box sides do much to prevent sagging in mattresses. In the better modern mattresses the side piece is made as a separate unit by quilting a suitable filling between strips of strong fabric and ticking; this prebuilt unit is prepared in rolls ready for assembly with the top and bottom ticking pieces and is considered more durable than the outside rolled edge type. Tufting using a button and tape should stand up better than tufting with button and cord; ticking rated serviceable closely approximated or exceeded the requirements of Federal Specification CCC-T-351 (110 lb. minimum breaking strength in the warp and 65 lb. minimum in the filling for striped ticking weighing 7 oz. per sq. yd.). Metal perforated disks in the edge piece should give just as good ventilation as stitched eyelets and are judged more sanitary, but fine mesh wire ventilators are to be preferred to either of these types, since they give better protection against the entry of insects. Corded handles give indications of greater durability than fabric strap handles and are somewhat easier to grasp.

Relative hardness of the mattresses was determined and is mentioned in the listings for information only, as the hardness desired is a matter of personal choice. Ventilators were of the perforated disk type except as noted.

Ratings are cr47.

A. Recommended

Beautyrest (Simmons Co., Elizabeth, N. J.) $42.50. Weight, 74 lb. Medium soft. Spring unit of excellent construction, composed of 837 small barrel-shaped coils pocketed in gray (undyed) sheeting of the type known to the textile trade as "gray goods." Quilted prebuilt side construction. Blue and gray striped ticking, serviceable. Cotton felt pad of good quality. Tufting of button-tape type. Corded handles. Indicated durability of springs excellent; performance in machine test far better than other mattresses tested; no springs found broken after 600,000 single passes of the test roller. However, instances indicating manufacturer's service policy not fully considerate of the consumer's interest have been reported. 3

B. Intermediate

Sealy (The Sealy Mattress Co. of New Jersey, Passaic, N. J.) $42. Weight, 60 lb. Soft. Spring unit of excellent construction composed of 242 hourglass shaped coils reinforced with helical wire around its outer edges through which ran a fairly thick round metal bar. Quilted prebuilt side construction. Striped aqua ticking of a serviceable grade. Sisal pad and cotton felt, of good quality. Button and cord tufting. Fabric strap handles and stitched eyelet ventilation, both undesirable. Spring durability as indicated by machine test, fair; 4 broken springs at 80,000; 48 at 130,000. 3

Sleepmaster (Sleepmaster Products Co., Inc., Newark, N.J.) $46.44. Weight, 68 lb. Soft. Spring unit of excellent construction composed of 198 hourglass shaped coils reinforced with helical spring wire around its outer edges through which ran a fairly thick round metal bar. Quilted, prebuilt side construction. Blue and white striped ticking, serviceable. The jute protective pad was good and sturdy, but the cotton felt pads were dirty. Tufting was of the less desirable button and cord type. Corded handles. Indicated spring durability, good; there were 4 broken springs at 90,000 passes; 41 at 150,000. 3

C. Not Recommended

Encore (Eclipse Sleep Products, Inc., Brooklyn, N. Y.) $24.75. Weight, 50 lb. Very soft. Spring unit of only fairly good construction, composed of 182 hourglass shaped coils reinforced at sides with helical spring wire running in only one direction. Outside rolled edge (less desirable than prebuilt unit). Poor quality, light weight, brown and white striped ticking of very low breaking strength. Sisal and cotton felt pads of good quality. Button and cord tufting. Fabric strap handles. Indicated spring durability, good; 3 broken springs at 80,000; 28 at 120,000. 1

Simmons Innerspring (Simmons Co.) $29.95. Weight, 64 lb. Soft. Spring unit of only fairly good construction composed of 242 hourglass shaped coils reinforced with a heavy helical spring wire around the outer edges. Quilted prebuilt side construction. Brown and white striped ticking of serviceable grade. Jute pad was not of a good enough grade, but cotton felt was of good quality. Button and tape tufting. Corded handles. Indicated spring durability, very poor; 8 broken springs at 60,000; 63 at 123,000. 1

Englander (The Englander Co., Inc., Brooklyn, N. Y.) $33.99. Weight, 56 lb. Very soft. Spring unit of only fairly good construction, composed of 180 hourglass shaped coils reinforced at ends with helical spring wire running in only one direction. Outside rolled edge. Blue and gray striped ticking of serviceable grade. Sisal pad and cotton felt both of poor quality. Button and cord tufting. Fabric strap handles. Indicated spring durability, good; 3 broken springs at 85,000; 38 at 135,000. 2

Imperial (Stearns and Foster Co., Lockland, Cincinnati) $39.95. Weight, 65 lb. Soft. Spring unit of excellent construction composed of 252 hourglass shaped coils reinforced with helical wire through which ran a flat metal bar. Quilted prebuilt side construction. Jacquard woven ticking of a serviceable grade. Cotton felt of good quality. Button and cord tufting. Corded handles. Indicated spring durability, poor; 3 broken springs at 70,000 passes; 59 at 135,000. 2

Ice Crushers

ALTHOUGH not as widely used as juicers, ice crushers nevertheless have their place in many home kitchens. They are not in very plentiful retail supply as yet, but it was possible to obtain three crushers and one combination crusher and juicer for test. The appliances were of two types: (1) grinders, in which a crank is turned to operate the ice-breaking mechanism; and (2) crushers, which break up the ice cubes as the two parts of the appliance are forced together by a handle.

The appliances were checked for speed of crushing, ease of operation, fineness of ice particles produced, and safety.

Speed of action was determined by the time in seconds required by each machine to crush cubes of ice 2 in. x 2 in. x 1 in. or 1-7/16 in. x 2 in. x 1 in.

Dazey Triple, Model 160, Ice Breaker.

selected to give total volumes of 8 cu. in. in the first trial and 20 cu. in. in the second.

Ease of operation included an estimate of the effort needed to crush the ice cubes, and consideration of any other factors requiring extra manipulation, safety precautions, etc. (Ease of cleaning was not considered a problem with ice crushers.)

Ice-O-Mat, No. I.C.539

Fineness of the crushed ice was judged after measuring representative particles. Due to the very great variation in shapes of the particles, these measurements were rough approximations only, but nevertheless served to give a satisfactory index of particle size. In addition to particles of typical size, all of the crushers produced some that were very fine.

Ratings are cr47.

Ebaloy Ice Crusher.

A. Recommended

Dazey Triple, Model 160 (Dazey Mfg. Co., St. Louis 7) $5.95. Grinding type. A well-designed, well-made ice breaker mounted in a wall bracket. Fast. Very easy to operate; no flying chips, but when ice receptacle was removed, water from melting ice dripped to floor or table. Adjustable for fine, medium, and coarse chips. Self-closing lid made the insertion of fingers into hopper to hold cubes in place difficult and thus with reasonable care in use would eliminate danger of injury to user. 3

B. Intermediate

Ebaloy (Ebaloy, Inc., Rockford, Ill.) $1. Crushing type. A small hand breaker which worked like a nutcracker and had capacity for 1 large or 2 small cubes, only. Fast. Easy to operate; pressure needed was not great, but chips flew about as jaws

Big Squeeze Combination Ice Crusher and Juice Extractor.

closed. Produced coarse chips only. Because of limited capacity, this crusher would be suitable only for the infrequent user who needs only small amounts of ice. May be stored in ordinary kitchen drawer. **1**

Ice-O-Mat, No. I.C.539 (Rival Mfg. Co., Kansas City, Mo.) $4.98. Grinding mechanism, similar to *Dazey*, but more effort was required to turn crank and device had to be held in place on table during ice-breaking operation; some tendency to jam. Medium to fine chips; not adjustable. Fairly fast. There was possibility that if the fingers were used to hold ice cubes in the hopper they might be cut or injured. **3**

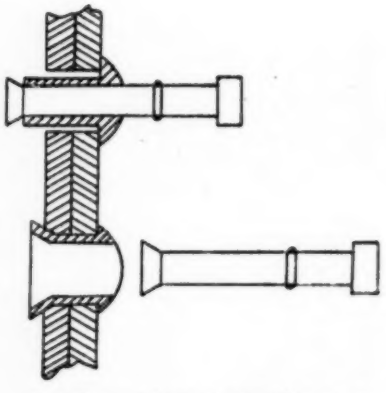
C. Not Recommended

Big Squeeze, Combination Ice Crusher and Juice Extractor (Ulmer Engineering & Mfg. Co., Hollywood 28) $6.93. Crushing type. Juicer was converted into ice crusher by exchanging juicing cup for an ice-holding cup which had 55 sharp pointed ½-in.-high spikes in the bottom. Unless cubes were very carefully placed in rear of holding cup, the crushing operation required a hammering action. Much slower than other crushers tested. Produced chips in a variety of sizes but most of them were very coarse; finely chipped ice tended to pack in teeth of cup. Points of teeth would scratch fingers of person attempting to loosen packed ice particles. **3**

The Cherry Jr. Riveter

THIS SET, advertised in Popular Science, consists of a little "pull" riveting tool known as *Cherry Jr. Riveter*, 25 rivets with 3/16-inch "grip length," and 25 with 1/8-inch grip length. The kits come in various sizes, but the one sold for household use is No. 60, which retails for $2.48, plus postage, from the Cherry Rivet Co., 231 Winston St., Los Angeles 13. Extra rivets are available in packages of 100 for $2.55, plus postage.

This appears to be a popular form of a type of riveting device which was much used during the war, chiefly in airplane construction. The kit referred to is the smallest of several made by this firm and is intended for work on very light materials and repairs of small objects such as boxes, toys, leather belts, radio assemblies, etc. Rivets for No. 60 are 3/32 inch in diameter and consist of two parts—a solid stem with a pulling head at one end and a pull-through head at the other, around which a hollow rivet fits loosely. The riveting tool consists of a simple hinged arrangement like a pair of pliers in reverse, so that as the handles are squeezed together, the opposite ends spread apart. The nose of one jaw is slotted to accommodate the stem of the rivet and is just thick enough to fit under the pulling head.



Showing method of upsetting or expanding the Cherry *tubular aluminum rivet by pulling cone-headed stem through it.*

To use the riveter, a hole is drilled with a No. 39 drill (diameter .099 in.); the rivet assembly is dropped into the hole; the riveter is placed so that the slot engages the pulling head of the rivet; the handles are squeezed together and the stem is thereby pulled all the way through the rivet. The pull-through head expands the hollow shank of the rivet to fill the hole and make a firm though lightweight fastening. The end of the rivet, which is spread laterally by the pulling through of the stem, projects about ⅛ inch beyond the surface of the material which is fastened, the amount of projection depending upon the thickness of the riveted parts.

There would be many home riveting jobs where the protruding end of the rivet would be objectionable, and in that case, this end would have to be hammered down. This would not be very practical, because to do a good job, the projecting end would have to be flared out by use of a large center punch, before being hammered down. The chief merit of this type of riveting is that it can be applied to "blind" riveting jobs where only one side of the work is accessible, and there are various light jobs for which the little riveting outfit would be handy, provided the thickness of material was such that the rivet grip length was suitable for it. The consumer should probably not buy the kit until he has considered whether the price of about 2.5 cents per rivet is too high, and whether the job is one that could be satisfactorily done with ordinary rivets, which cost about a tenth as much.

The *Dogmaster*— A Frankfurter Cooker

THE picture below in this column was taken from Gimbel's department store ad which appeared in the New York Herald Tribune late last summer. The novel suggestion that hot dogs could be cooked in 1 to 2 minutes by "high-frequency inductance" in so simple and inexpensive a contraption would be intriguing to persons who like houseware and appliance gadgets. Consumers' Research decided that this was something that would have to be seen to be believed, and should be tried out for the benefit of all who are excited about the prospects of "electronic" and other new-fangled cookery methods.

A "magical, marvelous *Dogmaster*" was purchased and used exactly according to directions. The plug was put in a wall socket connecting the gadget to a source of supply at rated voltage; 6 oz. of warm water and 2 level teaspoons of salt were mixed together in a glass until the salt was dissolved; the reservoirs on each side of the cooker were filled to the indicated level; then 3 frankfurters (averaging 0.11 lb. each) were inserted; the lid was then closed, completing the electrical circuit.

At the end of 60 seconds a frankfurter was removed but found barely warmed through. Another, at the end of 90 seconds, was in about the same condition. At the end of 4 minutes a third frankfurter was removed and found to be cooked sufficiently to satisfy those who prefer their doggies rare (and presumably are willing to take the great risk of consuming undercooked pork).

Since all pork products should be thoroughly cooked to make them safe for consumption by either man or animals, further trials were made to determine how long it would take to achieve well-done frankfurters in this novel appliance. Some frankfurters were steamed in the usual manner using an ordinary cooking utensil on a range and a jury of taste-testers decided that those in which the internal temperature reached 194°F were satisfactorily cooked. (This without respect to the question of whether a high temperature had been maintained for a sufficient time to kill possible infestation[1].) A full load of frankfurters was then put in the *Dogmaster* and cooked until the internal temperature reached 194°F. It took *13 minutes* to reach the desired temperature, which is something very different indeed from the 60 to 120 seconds mentioned in the Gimbel's advertising.

The claim that the *Dogmaster* works on a principle of "high frequency inductance, AC-DC" was certainly not substantiated, and Gimbel's ad-writers had better take another look at

DOGMASTER

COOKS 6 TO 9 HOT DOGS IN SECONDS—ELECTRICALLY

How would you like to have the hot dogs all ready to pop into the rolls 2 minutes after the company comes in at the door? The magical, marvelous Dogmaster makes it possible. It's a little plastic box about the size of a jewel case—holds 6 to 9 franks. You just put in a little salted water, pop in the franks, and plug into an outlet. The first batch is cooked in 90 to 120 seconds, the others in 60 seconds. Dogmaster works (is there a physicist in the house?) on a principle of high frequency inductance, AC-DC. Write, phone. *8th Floor* **6.30**

The discussion in the accompanying article would seem to indicate that there wasn't *a physicist in Gimbel's house.*

[1]Trichinae, the microscopic worms which cause the serious disease of trichinosis, are killed at a temperature a little below 137°F, and federal regulations require that *all parts* of pork products or meat preparations treated for trichinella infestation by heat processing shall be raised to that temperature; 137°F is, of course, well below the figure of 194°F used in the test of the *Dogmaster* as a satisfactory temperature (satisfactory, that is, from the standpoint of palatability to the consumers of frankfurters).

their engineering friends' textbooks. (60 cycle a-c, and d-c are both completely ineffective ways of providing "high frequency inductance.") Actually, the ends of the frankfurters were boiled in the reservoirs of salt water which heated up when the circuit was completed by closing the lid. Centers of the frankfurters were steamed. Some gadget-minded subscribers may, of course, like to purchase this misrepresented appliance, but for our money we'll go right on using a kettle on the kitchen stove, or even a frying pan or grill.

C. Not Recommended

Dogmaster Frankfurter Cooker (Maxwell Electrical Products Ltd., Hollywood 27) $6.30. A plastic box-like electrical cooking appliance with 2 reservoirs for salt water. Water was heated when cord was plugged in and cover switch closed, making the water and frankfurters part of the electrical circuit. The frankfurters rest crosswise in the appliance with an end in each reservoir so that the electric current passes from one reservoir through the frankfurters to the other reservoir. This causes the water to boil. The result is that the ends of the frankfurters in the water are boiled and the centers, which are out of the water, are steamed. Although the electric current does pass through the frankfurters, they are actually cooked by boiling and steaming and not by "high frequency inductance" as the advertising falsely suggests. The switch which operated when cover was closed started cooking operations; cover had to be held down to prevent opening of switch, even when only one frankfurter was being cooked. Construction of appliance was simple, but it did not appear sturdy enough to withstand frequent use without damage. Cooking time shown in manufacturer's instructions and dealer's advertising found grossly inadequate and unsafe for any food made with pork. Hinge of plastic cover became warped and loosened; the hinge pin rusted; and the switch operated by cover was in poor condition at conclusion of test.

★

Commercial Mail-Order Photographic Developing and Printing—Supplementary Report

SINCE the report on this subject appeared in the July 1946 issue, the printing and developing work of four other firms has been brought to CR's attention by subscribers. Rolls of exposed film were sent to these firms for developing and printing and the resulting films and prints carefully examined and rated by a photographic expert as in the previous survey. The results obtained from one firm were better than average, but the specimens of work produced by the other three services were not such that their work can be recommended. Prices given are for developing one No. 120 roll (2¼ in. x 3¼ in.) and making 8 prints.

B. Intermediate

Beta Photo Laboratories, P. O. Box 745, Grand Central Annex, New York 17. 50c. Negatives developed in fine-grain developer, which would be satisfactory for generously exposed negatives, but amateurs, who usually underexpose would find negatives too thin. Developing judged practically as good as that of Edwards Fine Grain Laboratory (rated as one of the best in the group reported in July '46 Bulletin). Cutting reasonably well done, but negatives showed some signs of overheating in printing, and had some finger marks; they were, however, better than average in cleanliness. Prints were enlarged to about 3 in. x 4¼ in. but did not include the whole of the negative, which would be objectionable to some. Prints were better than average, on the whole, but would have been improved had a more suitable grade of paper been used. 2

C. Not Recommended

Bostonian Photo Laboratories, Uphams Corner, Boston 25. 35c. Negatives less contrasty than those produced by most finishers but showed evidence of careless handling. Except that one negative was trimmed too close, cutting was satisfactory. Some overheating of negatives during printing was in evidence. Prints were slightly enlarged, giving a print size about 3½ in. x 5 in. No evidence of endeavors to match printing paper to negative. Ferrotyping poor. 1

Mail Bag Service, Box 5440A, Chicago. 25c. Negatives were developed correctly but badly scratched on the backs, indicating carelessness in handling. Cutting poorly done, and negatives wrinkled from overheating. Better prints could have been made if paper had been properly chosen. Marks appeared on prints that were not present in negatives, probably due to a scratched glass in printer. 1

Malla-Film, General Post Office Box 90, New York 1. 30c. Negatives badly fogged and streaked, evidently as result of having been developed in an exhausted developing solution. They were also scratched and dirty. One of the negatives had a piece of black paper stuck to it and another was torn almost completely in two. This evidently happened after the print was made, since the print did not show evidence of the tear. Negatives were carelessly cut and showed evidence of overheating. Ferrotyping of the prints, poor. 1

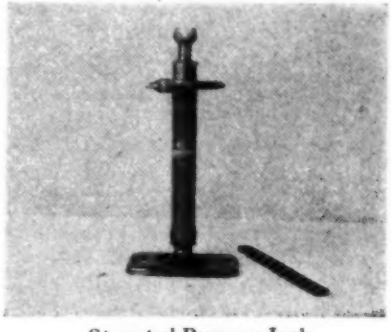
Four Automobile Jacks

To people who have driven an automobile for a good part of a lifetime, the search for an automobile jack of satisfactory type and quality continues like Ponce De Leon's search for the fountain of youth. Two of the latest jacks purchased for test by CR reflect some measure of success in this search, for although they had some disadvantages, they were better, at least in their new condition, than any jack previously examined. Quite likely the jack problem will not be fully and satisfactorily solved until automobile manufacturers supply built-in jack systems in their cars. Such systems have been used successfully and fairly extensively by European manufacturers for some years.

There are difficulties with the built-in jack, chief of which is that the system cannot be produced at the low price which manufacturers insist upon for parts and accessories which they buy, and the difficulty of protecting the jacks when they are not in use from mud and dirt. So far as the higher price goes, American manufacturers have never been timid about asking quite luxurious prices for optional extra equipment such as heaters, defrosters, radio receivers, twin tail lights, twin horns, white-wall tires, etc., and we believe many owners would prefer to have a good set of built-in jacks offered in that way instead of some of the non-essential items of accessory equipment which are commonly made available—or, indeed, "pushed" upon the prospective purchaser of a new car.

A. Recommended

Spunsteel Bumper Jack (Spun Steel Corp., Canton, Ohio; distributed by Autoproducts Corp., 540 W. Lake St., Chicago 6) $2.98, plus postage. Double-screw type operated by ratchet. Detachable handle 11¼ in. long.

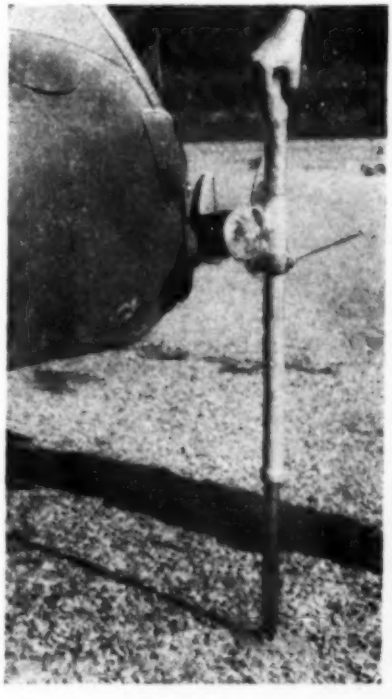


Spunsteel Bumper Jack

Height closed 11 in.; height at maximum extension 27¾ in. Base 4 in. x 6 in., which provides a firm footing for jack even when necessary to use on uneven or slightly sloping ground. Jack was exceptionally simple and easy to operate. Detachable handle did not lock firmly into socket of ratchet and had a tendency to slip out, a fault which could easily be corrected by a very simple expedient by the manufacturer. Considered the most reasonably priced satisfactory jack yet tested. **1**

B. Intermediate

Vulcan Ace-Hy Hydraulic Bumper Jack (Vulcan Mfg. Co., Inc., Winona, Minn.; distributed by accessories dealers and service stations) $7.95. Lifting hook is attached to barrel of pump by clamp tightened by screw and short lever. Proper and safe tightening of this screw required considerable force (much more than many a woman driver could exert) to tighten clamp sufficiently to prevent its slipping when carrying the weight of the car. (This fault would warrant a *C* rating for the jack, for some users, perhaps.) A more positive locking or clamping arrangement could easily be contrived and would be very desirable. The handle for operating the jack was permanently attached to the pump and was in the form of a sleeve fitting over the top end of the barrel. This was a good feature, but the finish of the top of the sleeve was rough and unpleasant to the hand, especially in view of the fact that considerable force had to be applied to work the jack when the tire was nearly off the ground. To raise the car the sleeve handle was unscrewed about three complete turns, until free, and pumped up and down. The manufacturer, evidently cognizant of the tendency of bumper jacks to tip, warned purchasers on a tag attached to the jack to use the correct procedure in using the jack, namely: (1) To set brakes with car in low gear, (2) to block each side of the wheel opposite to the wheel being lifted, (3) to "have the spare tire handy," (4) to loosen the wheel lugs or nuts before raising the car. All sound advice, and, unfortunately, not always carefully followed by many car users. The blocking of the opposite wheel when a bumper jack is used is very im-

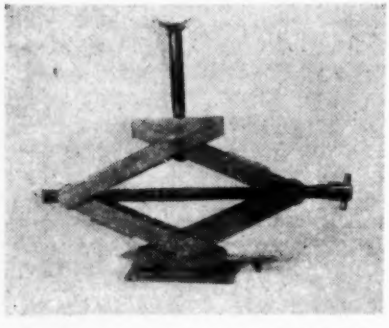


Vulcan Ace-Hy Hydraulic Bumper Jack

portant, and few realize how dangerous the use of such a jack can be if this is not done. This jack had a maximum lift of 18 inches and would pick up a load at a minimum height of 4 inches above the ground and raise it to a height of 22 inches. Its *maximum* height of lift was to a level 36½ inches above the ground from a starting height of 18½ inches. If equipped with a safer and more positive locking arrangement for the clamping of the lifting hook in position, this jack might warrant a *B* rating. **2**

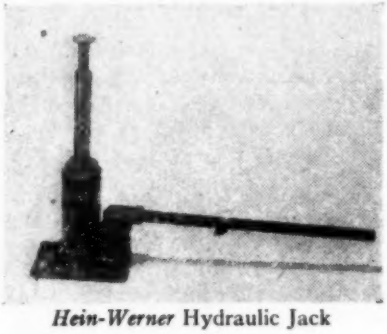
C. Not Recommended

Combination Axle, Bumper Jack (Distributed by Gimbel Bros., New York City) $4.49, plus postage. A scissors or lazy-tongs type of jack, with an attachment rod for converting from axle to bumper type. Did not carry any brand or maker's name. Equipped with handle 42 in. long which did not fold for convenient storage. Minimum height: as axle jack 5½ in.; as bumper jack 10½ in. Maximum height when fully extended: as axle jack 17¾ in.; as bumper jack 24 in. This jack required considerable effort to operate. When used as a bumper jack it did not have sufficient lift to raise some cars sufficiently high to permit removal of the tire. It was also not satisfactory as an axle jack because of the effort required to turn the lifting screw. The entire jack was poorly painted, and worse still, the screw threads were painted; it was necessary to work the paint out of the threads before operation was possible. **2**



A scissors-type jack from Gimbel's Department Store (N.Y.C.). No brand or maker's name appears on this jack.

Hein-Werner Hydraulic Jack, Model E3.9A (Hein-Werner Motor Parts Corp., Waukesha, Wis.) $10.95. This is the familiar type of hydraulic jack that goes directly under the axle. It will pick up a load from a height of 9 to 11 inches (depending on the position of a coarse screw in top of the piston rod) and raise it through a distance of 6⅝ in. to a height of 15⅝ to 17⅝ in.



Hein-Werner Hydraulic Jack

A first-class jack of its type, and though the type is in wide sale it was not considered suitable for general use with a modern automobile, for two reasons: (1) Its minimum height (9 inches) was too great to permit its use on the front wheels of some cars equipped with independent wheel suspension; (2) the operating handle was much too short—only 19 inches long—so that the user would have to lie on the ground, often on ice or snow, or in mud, under the rear end of the car to get the jack in position and to operate it after it was placed. This jack must accordingly receive a *C-Not-Recommended* rating for automobile use. **3**

• • •

The use of axle jacks, even when they are equipped with long handles extending all the way to the rear-most part of the car, involves difficulties in the placing of the jack in position if one is to avoid ruining clothes, or, at best, incurring a bill for cleaning. A simple expedient to eliminate this difficulty in large part is to drill the base of the jack and bolt it at one end of a stout board about 4 or 5 feet long and 9 or 10 inches wide. This board, if too long for convenient storage in the trunk, can be hinged at the middle.

With any jack, no matter how good and foolproof it may appear to be, no one should go underneath the car to do any work, until, after the car is raised by the jack, wood blocks are placed in position so that the blocks will hold the car up securely if the jack should fail or some impact or jar cause it to slip out of position.

Shock Hazard with Home Appliances

Girl Electrocuted While Taking Bath

Moorestown, Feb. 19—An 18-year-old telephone operator was electrocuted here last night while taking a bath.

The girl, _____ was sitting on the edge of the bath tub, with her feet in the water, and grasped a connected sunlamp according to Coroner Joseph D. Weber, of Mt. Holly. The shock hurled her from the tub. She was found unconscious by her parents who rushed upstairs when they heard the noise.

She was pronounced dead by Dr. Edward E. Wildman, of Moorestown.

CONSUMERS' RESEARCH has frequently discussed the danger in use of any electrical appliances in the bathroom. In one European country, this hazard was recognized as so serious that before the war, at least, government regulations forbade installation of any electric switch in a bathroom.

Sunlamps, discussed in the March 1947 BULLETIN, are particularly dangerous, and we wish to remind everyone of the special shock hazard of such lamps in the bathroom environment. The news story at the left shows that the hazard actually is a real and deadly one.

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Facts and Fads in Garden Soil Management—I

By WARREN B. MACK, PH.D., THE PENNSYLVANIA STATE COLLEGE

THERE has been much interest in the last few years in various proposals made by amateur gardening experts for improvement of the characteristics of the soil and of crops. In the accompanying article, Professor Mack discusses the essential scientific basis for crop growing, including soil characteristics, and soil management; the purpose of tillage, manuring, and fertilizing; and the questions which have been particularly argued lately of composts *vs.* commercial fertilizers; organic matter, and humus; and green manuring. The series of articles will conclude with a discussion of the new schools of crop-growing theory including biodynamic farming, earthworm gardening, and the problem of the moldboard plow which formed the subject of a popular book which some have thought should bring about a revolution in the method of preparing fields for crops.

The material in this article should be of aid to the layman in helping him to judge the soundness of various suggestions made of means for improving products of farm and garden crops, reducing the attacks of insects and diseases, and producing food of higher nutritive value.

MUCH interest in the care of soils has been aroused among amateur gardeners during the past few years and more recently among commercial gardeners and farmers by certain popular writers on soil management and conservation. As a stimulant to this interest, a few of these writers and lecturers have made game of the professionals, who, they state or imply, are either behind the times or in the pay of the fertilizer, farm machinery, insecticide, or fungicide corporations, severally or collectively. Because of the disproportionate emphasis on limited aspects of the subject by one or another of these writers and speakers, a brief summary of the basic facts may be helpful to both the amateur and the commercial gardener or farmer.

THE FACTS

The Functions of the Soil in Plant Growth

The soil serves the growing plant in three major respects: (1) as a medium of *support;* (2) as a medium for *supplying water and oxygen;* and (3) as a storehouse and medium for *supplying mineral nutrients.* All of the elements needed for nourishing the green plant, except carbon and oxygen, are supplied, under natural conditions, exclusively through the soil to the roots or other underground portions of the plant. As a general rule, these elements are absorbed as ions, or electrically charged portions resulting from the dissociation of simple, inorganic chemical compounds in water or other solvents (which include carbonic and other organic acids).

The organic content of the soil is incidental to its proper functioning in the three major respects stated above. The soil itself, in fact, is incidental to the nutrition and growth of green plants, because they can be grown perfectly well without it, simply by supplying the needed ions in solution to the roots, either directly, or through a suitable inert medium.

Major Characteristics of Soils

The major characteristics of agricultural soils are grouped as physical, chemical, and biological.

1. Physical characteristics include: (a) the sizes of the soil particles, which determine the *texture* of the soil; (b) the arrangement or degree and nature of aggregation, expressed as the *structure* of the soil, which to be favorable to productiveness must in loams, silts, or clays be granular and fairly stable, as it may be observed to be in soils on which sods or other plant covers have been growing under natural conditions.

2. The most important chemical characteristics of a soil are the rates and proportions in which it can supply the nutrient elements required by plants. These characteristics are dependent both upon the content of these elements in a soil and upon the rates at which they can be rendered soluble in the soil water. Aeration, acidity, moisture content, temperature, biological content, and mineral content influence these rates.

The humus or organic matter content is one of the most important chemical characteristics of soil; this influences physical, chemical, and biological characteristics, directly and indirectly.

3. Biological characteristics of agricultural soils include: (a) soil flora, embracing all forms of plant life growing in or on the soil, from bacteria to forest trees; (b) soil and surface fauna, embracing all forms of animal life, including worms, insects, and other animals, large and small, which naturally inhabit the soil, whether in or on it.

Of wide popular interest at present, thanks to controversies concerning them, are the fungi which assume special roles in the decomposition of dead plant tissues to form humus as a final product, as well as ammonium compounds,

nitrites, nitrates, carbonic acid, and various sugars, organic acids, alcohols, hormones, and other organic compounds as intermediate or other end products. Certain of these products enter into the chemical processes of the soil, hastening the weathering of minerals and solution of plant nutrients therefrom, to be used by plants or to be lost from the soil in drainage waters or by volatilization. Among these fungi are some which may invade the roots of certain species of plants, including many forest trees, thereby becoming either parasites upon the plants or symbionts with them. The latter relationship establishes the fungus so living as a mycorrhiza (Greek for *mold root*) which lives with a part of its tissues within the living roots of the higher plant, and with the remainder in the soil surrounding these roots, digesting organic matter in the soil and transferring it into the roots.

Objectives and Principles of Soil Management

The major objective in soil management, which includes everything man does to the soil, is the maintenance of its productiveness, or its capacity to yield good crops. Soil management may be considered with respect to: (1) manipulative aspects directly affecting its physical characteristics; (2) applicative aspects, involving the addition of materials directly affecting its chemical characteristics, especially its supply of nutrients; and (3) the maintenance of the organic matter of the soil.

Tillage and Its Effects

Manipulative aspects of soil management include tillage in all its phases. This may be considered as seed- or planting-bed preparation and inter-tillage or cultivation. Plowing, disking, rolling or firming by other means, harrowing, and smoothing may be included in seed-bed preparation; in all, a farmer may perform as many as five or six operations on a soil before planting a crop in it, and planting itself and subsequent packing of the soil may constitute two more operations before the crop comes up or appears above the soil surface. Inter-tillage or cultivation may constitute as many as four or five more operations, some of which may involve nearly all of the soil surface, but with the later operations affecting a successively smaller portion between the rows.

In usual farming practice, the successive tillage operations involve a continually diminishing depth of soil, beginning with four or five inches in plowing (six to seven inches are the recommended depth for general farming, and eight for vegetables, but the usual practice is less), and decreasing to one and one-half inches or less in later cultivations. Each operation exerts its major effects upon the portion of the soil which is reached by it, and unless the equipment by means of which it is done is fairly heavy, relatively little influence is exerted on the soil below the reach of the implement being used, except indirectly from effects upon the part of the soil which is worked.

Tillage operations are stimulating to the crop immediately in prospect, but exhausting to the soil in the long run.

Manuring and Fertilizing

Applicative aspects of soil management may be embraced under the term *manuring*, as the British use it: The addition of materials such as composts, commercial fertilizers, lime, and plant and animal refuse to increase the productiveness of a soil. From its origin, the word *manure* should denote the manipulative aspects of soil management; it is derived from the old French word *manouvrer*, which meant to work by hand. In present English usage, however, it designates materials applied to improve soil productiveness, or the application of these materials; in America, it is limited to composts of animal and plant origin and their application to soils.

The art of composting and the use of composts in soil management is an ancient one, and until the day of the modern chemist was almost the only means and method of maintaining soil productiveness. It is admitted by all soil scientists to be one of the most effective, if not the most effective means to this end. Liming also is an ancient procedure, as was the application of ground bone, wood ashes, waste wool, meat scraps, and blood as fertilizers.

The use of inorganic chemical compounds was a practical result of discoveries made during the first 40 years of the 19th century by the chemists and plant physiologists Theodore de Saussure at Geneva, Justus von Liebig in Germany, and J. B. Lawes and J. H. Gilbert at Rothamsted in England, that fertilizing materials in use up to that time contained one or more of the following: nitrogen, phosphorus, potassium, calcium, and organic matter, mainly cellulose. The introduction of chemical fertilizers containing nitrogen, phosphorus, and potassium to agriculture was due to a great extent to J. B. Lawes, who set up the first fertilizer factory at Rothamsted in 1843. According to Dr. E. J. Russell, recently retired from the Directorship of the Rothamsted Experimental Station (which was set up by J. B. Lawes with J. H. Gilbert), fertilizers "greatly improved agricultural production of the time [of their introduction] and played no small part in enabling Europe in general and England in particular to maintain their rapidly increasing population."

In the year ended on June 30, 1944, fertilizer use in the United States and Territories amounted to 12,424,810 tons, of which 706,200 tons were of organic origin (though much of this was chemically treated) and the remainder was inorganic. (*To be continued.*)

Razor Blade Edges— With Pictures

IN connection with CR's tests of razor blades, a study was carried out on CR's new equipment, briefly described in CR's November 1946 BULLETIN, to determine the characteristics of different blades in respect to their response to stropping. Twenty-four new blades of different brands were subjected to the instrumental test for sharpness. Seven of the blades were found good, seven fair, and ten poor. Each blade was then stropped with a *Twinplex* sharpener (which is one of very few kinds that is readily purchasable at this time).

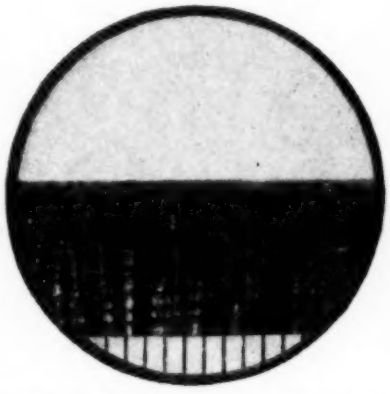

Figure 1—*Illustrating condition of the edge of a new blade of exceptional quality. Magnification 250X.*

Results showed that there was no great difference between the so-called extra thin (approximately .004 inch) and the regular thickness blades (approximately .006 inch), in respect to their response to stropping; some blades in each group that were originally dull were well sharpened by the use of the stropper.

A clear difference appeared to exist between the blades that were rated good in the instrumental test and those rated fair and poor. The good blades responded well to stropping, but in only one case, with such a blade, was the blade after the use of the stropper sharper than it was before. Approximately half of the blades in the fair and poor group, however, responded in such a way that the sharpness produced after stropping was superior to that of the original cutting edge, indicating that some manufacturers' control over sharpening and honing was not sufficiently rigid to produce the maximum keenness possible for a given blade.

The blades in this group did not achieve the characteristic sharpness of a good blade (unstropped), when stropped with the *Twinplex*, except one, the *Wisp Thin*. This blade, on the initial run, failed after five strokes on the testing instrument, but after it was stropped, it ran over 100 strokes before failure, corresponding to a superior blade. This would appear to be a case where the manufacturer did not complete his job of finishing the edge, perhaps was not aware of the requirements of proper factory stropping of the edge. The consumer who does not use a stropper before the first shave with such a blade would be compelled to class it as unsatisfactory, since a new blade should obviously be ready for use and in *at least* as good condition as it could be put by stropping by hand methods. With the exception of three brands, either one or both edges of the blades tested responded favorably to the stropping with the *Twinplex* after having been

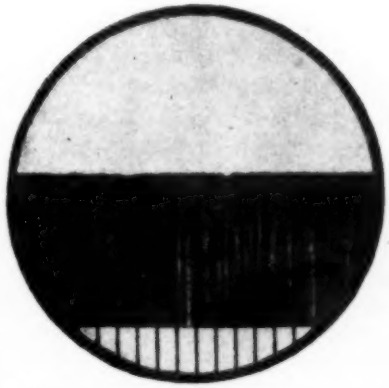

Figure 2—*A new blade, but note poor initial condition of edge. Magnification 250X.*

Figure 3—*Showing condition of edge of a poor blade (stainless steel type), after a single shave. Magnification 250X.*

Figure 4—*Another blade (carbon steel type) after several shaves. Magnification 400X.*

Figure 5—*Another blade of same make as that of Figure 4, used for several shaves, before stropping. Note that parts of the edge show a "wire edge" or burr from use in shaving. Magnification 250X.*

run on the testing instrument to the point where it gave six strokes or less before failure by cutting through the paper test strip. (Sample blades of *Barflex*, *Thynne*, and *Personna* brands were not much improved by stropping, and they performed poorly both before and after stropping.)

In using the *Twinplex*, approximately 30 revolutions of the crank were used for each sharpening; it was found that a number of turns going considerably beyond this number produced little improvement over that obtained by 30.

The indication of these findings is that some manufacturers of razor blades very commonly do not carry the stropping process as far as they should, for there would appear to be no other way to explain satisfactorily why stropping on a piece of hand equipment like

Figure 6—*The same section of the blade as in Figure 5, after stropping with* Twinplex *sharpener. Magnification 250X.*

the *Twinplex* should substantially or greatly improve performance of a razor blade made in mass production. Photomicrographs of edges of various blades appear to confirm this, as some blades have very even straight edges with only very slight irregularities showing at

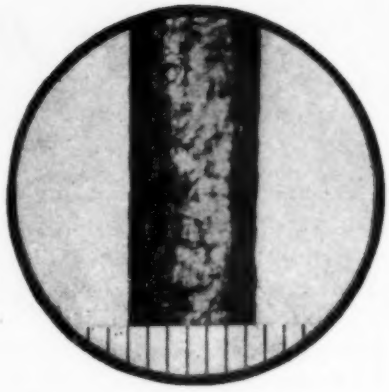

Figure 7—*Human hair, magnification 250X. The actual diameter of the hair shown is about .065 millimeter (.0026 in.). The diameter of the hair of a beard will be 2 to 2½ times as great, averaging perhaps .16 mm. (.006 in.).*

a magnification of 250 times, and others which gave poor performance both in shaving and in the instrument test show a raggedness of edge at the same magnification which strongly indicates the need for a better controlled sharpening process, and the employment of inspectors to watch closely the condition and finish of the edges of blades coming off the production lines. (Some manufacturers produce relatively quite uniform blades; with others, blades are very uneven in quality.)

★ ★ Corrections and Emendations to Consumers' Research Bulletin ★ ★

Insulation
Col. 215, bottom
ACB '46-'47

Delete reference to pamphlet, Installation of Mineral Wool Insulation by Hand Methods. This is out of print and can no longer be supplied by the National Mineral Wool Association.

Luminite Illuminated Wall Switch Plate
Page 25
October '46

The Lamp Division of General Electric Co. has recently published a new "average useful life" rating for their *No. NE-2* neon lamp, which is used in the *Luminite Illuminated Wall Switch Plate*. The average useful life, formerly stated to be 3000 hours, is now claimed to be in excess of 25,000 hours for the *NE-2*, which would be equivalent to about three years with the lamp burning constantly. A 3-year life before luminous effect would be seriously deteriorated appears to be sufficient to warrant changing the *Luminite Switch Plate's* rating to *A Recommended*.

Westinghouse "Super 7," Model H 104, Table-Model Radio
Page 13, Col. 2
March '47

The statement: ". . .a pair of 'Beam Power Amplifiers' (6Y6) in push-pull in the output circuit" is incorrect. The tubes were actually operating in parallel—which is not so desirable an arrangement as push-pull, since push-pull circuits have the advantage of reducing second-harmonic distortion (high anyway in beam power tubes).

Cumulative Index for Consumers' Research Bulletins

January 1947 through June 1947

(Vol. 19, No. 1 through Vol. 19, No. 6.)

Single BULLETINS are available, at 30 cents. The month of issue is followed by the number of the page or pages on which the item appears.

Entries marked (*) are longer or more comprehensive items.

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Off the Editor's Chest

[*Continued from page 2*]

and cigarettes, cosmetics, phonograph records, photographic films and equipment, watches and clocks, electric light bulbs, telephone and telegraph service, not to mention larger items of expenditures such as musical instruments, sporting goods, jewelry, and luggage. Some notion of how large the toll is that is taken by taxes out of the family's income can be gathered from contemplation of the estimate that something like $56 a year is what the average car owner will pay in motor vehicle taxes of various kinds. The amount paid out by taxpayers in *federal* taxes alone has increased by nearly 700% since 1940, and runs to the astounding figure of $5.80, approximately, per average person in the population (including children and adults) per week, or about $22 per week per average family. To this figure, of course, must be added an additional amount for various state, municipal, and local taxes; this relatively small proportion of the total provides the evident and very substantial benefits of police protection, fire protection, street cleaning and other sanitary services, garbage collection, hospitals, schools, and libraries. For all of these services, including special services to business and to agriculture, control of food and drugs and of weights and measures, and many others, state and local governments collect only one-fifth the amount absorbed by the federal government's tax collections.

Reduction of personal income taxes, a step most vigorously opposed by the Administration, would undoubtedly be a factor in reducing costs and prices. Only the expenditure-conscious person and persons in the surtax income brackets are fully aware of the amount of wages or salary they contribute to the support of the federal government. To others the weekly pay roll deduction for income tax is a "wage cut" or just one of those things to be added on to the amount of money for which they are willing to work. In effect, the tax is collected from consumers, because the higher labor costs are necessarily figured in the retail selling prices for goods and services, just as automobile and truck taxes are collected from everyone, whether he owns a car or truck, or not. It may be argued that the reduction in costs of goods resulting from a decrease in the present income tax rates might not be passed on to consumers. That, of course, is a possibility, but judging from the worried discussions that are now appearing in numerous business and trade journals, the millstones of competition are beginning to grind again, and when competition works, reductions in tax outlays *will* be passed on.

Most forward-looking manufacturers and retailers indicate that they realize the need of producing better goods at lower prices in order to overcome increasing consumer resistance to present price levels. Like the mills of the gods, competition works slowly; this, from one point of view, is not undesirable, for sudden and sharp declines in prices inevitably mean bankruptcy of many small merchants and manufacturers who have stocks of goods that were purchased at high prices, and result also in much unemployment of workmen in factories and mines, and in the service trades. While there is no doubt that consumers benefit by being able to purchase merchandise at distress prices, economists consider that such savings to the consumer are usually offset in the long run by the unemployment and loss of production efficiency that necessarily result.

The chief obstacle to reduction of prices at the present time is that none of the principals involved wishes to reduce *his* "take," though he is very willing that all other groups concerned should get along with less income. To those, however, who are not on the government pay roll or who do not benefit from continuation of government operations at present high levels, it appears logical that the Administration should implement its emphatically expressed desire to see prices come down by cutting to a very substantial extent the large share that it takes of the national income. The technique of trying to reduce prices by denouncing them is somewhat reminiscent of one much publicized method advocated for coping with the depression of the 30's, which was that if we just kept up our courage and bought more goods, everything would come out all right. The federal government, which supports *high price levels* for farm products and many other items with taxpayers' money and demands that the prices of everything the wage earner buys must be *reduced*, should take the first steps toward *really lowering* the present high cost of living by withdrawing artificial support of prices for food and by cutting taxes, particularly the so-called luxury or excise taxes, on all or most of the numerous items that are considered necessities in the American standard of living. Consumers who want to do more than just grumble at current prices will need to do some plain talking and letter writing to their congressmen (who are naturally not unwilling to go along with the present scale of government expenditures if taxpayers are willing to foot the bill). It is not enough to emulate Calvin Coolidge's minister who in his sermon on sin "was agin it." Neither high prices nor high taxes are re-

duced by simply being "agin 'em." Tell the right people and tell them firmly and clearly, that you can recognize a cost-of-living increase due to taxes as easily as a rise in the price of pork chops and bread.

It will take intelligent and vigorous protest through proper channels on the need for reducing particular items of cost and the outlays of particular bureaus and agencies. One good place to start is to demand reduction of all taxes, whether they be federal, state, or muncipal, which increase the cost of consumers' goods. The persons to talk to and write to are your elected representatives in the Congress and in State legislatures.

War-Surplus Optical Parts

ADVERTISEMENTS appearing in magazines for amateur hobbyists, photographic magazines, etc., indicate that considerable amounts of war surplus optical material, such as lenses, prisms, mirrors, reticles, photographic filters, and even pieces of raw optical glass, are available from a number of firms.

It is implied that the amateur can construct readily such optical instruments as magnifiers, telescopes, field glasses, lantern slide projectors, optical systems for photographic enlargers, spectroscopes, and even photographic lenses and microscopes. Unfortunately, however, the firms which supply the optical material cannot supply the equally necessary metal parts to fit, except in extremely small variety, and the possibility of obtaining a set of suitable lenses, lens cells, retaining rings, and threaded metal tubing to assemble a telescope of a stated magnifying power, for example, is remote for the average man, probably even for a "hobbyist." A magnifier is, of course, only a converging lens, and any of the achromatic or non-achromatic lenses offered in the list may be chosen (or one already mounted in a convenient plastic or metal frame may be purchased at a five-and-ten-cent store).

A person not possessing a fairly well-equipped home workshop and the skill to use it for this type of work, is not in a position to take advantage of these optical surplus materials. He can, of course, stick lenses of suitable focal length into a paper mailing tube with plastic wood or other cement, and so make a telescope, but it will have little value except perhaps to demonstrate elementary optical principles, and its use will be trying to the eyes. A primary requirement of an optical instrument of even the simplest sort is that lenses be accurately centered and that parts be in accurate alignment; this requirement cannot be met with crude methods of construction.

A skillful amateur hobbyist who is the fortunate possessor of a good lathe and other metal-working tools, and who is able to make his own patterns and have them cast at a brass foundry, is in a more favorable position. He can very likely choose from the lists a suitable combination of lenses and prisms to build a good telescope of at least approximately the desired power. He can readily make parts for and assemble a lantern slide projector, provided he is satisfied with the mediocre definition provided by an ordinary achromatic lens system not corrected for astigmatism, as the lenses of good projectors are. By combining two achromatic lenses and inserting a diaphragm between them, he can make a lens for his camera or enlarger which is about as good as the old-fashioned "rapid rectilinear" lenses still supplied on cheap cameras, but the cost will probably be greater than that at which he can obtain a secondhand lens. As a practical matter, except for possibly interesting experiments with homemade telephoto lenses, attempts at making camera lenses are hardly worth while. Making a microscope would be a severe test of the hobbyist's skill, and the choice of suitable lenses from these lists might be a matter of some difficulty. Binocular instruments of any sort are better left alone, because of the virtual impossibility of aligning them without the aid of collimating devices found only in well-equipped factories or in laboratories; many manufacturers who attempted the manufacture of binocular field glasses during the war had great difficulty in producing an acceptable product, and some failed dismally.

While the surplus optical parts are being sold at material reductions from the prices paid by the government, these prices cannot be considered remarkably low, in view of the fact that the material has practically no value except for its original purpose and for the very few technical workers and research men and perhaps some others, who actually need and can make good use of them for experimental work.

Do You Really Need a Speed Graphic?

THE *Speed Graphic* camera, which first attained great popularity when it began to supplant the *Graflex* with news photographers, has now become one of the most sought-after of the cameras which make negatives of moderate size. The 3¼ x 4¼ in. and 4 x 5 in. sizes are in greatest demand, but the 2¼ x 3¼ in. *Miniature Speed Graphic* is also favored by many users.

The recent popularity of this camera amounts to a real vogue and has led many persons to believe that it is the only camera well adapted to "serious" photography; it appears that the majority of the large number of ex-servicemen rushing into professional photography as a post-war career are placing orders for *Speed Graphics*. While there is no question that the *Speed Graphic* is an excellent camera, it is not in fact of such outstanding merit as to deserve the extraordinary preference which is being shown for it. Other cameras are of equal quality, and some are more suitable for a diversity of purposes.

The *Speed Graphic* is a ruggedly-built camera with wooden body, and (in current models) with a metal bed except in the 5 x 7 in. size. Its back is fixed in the horizontal position, but a 2¼ x 3¼ *Graflex* revolving back can be fitted to the 3¼ x 4¼ in. model. Either a *Graphic* back, with spring-actuated ground-glass panel, or a *Graflex* back, with removable ground-glass panel, can be supplied; the *Graflex* back has the advantage that sheet-film magazines can be used with it.

Editor's Note:

After the article that follows was written, new models of the *Speed Graphic* embodying certain improvements, along with a new camera known as the *Crown Graphic*, were announced. The *Crown Graphic* is to be without the focal-plane shutter; omission of this (with price reduction of about $35) may be considered an advantage to most users and tends to confirm CR's opinion, as expressed in this article, that the focal-plane shutter is not nearly as important for camera users as many have been led to believe. Information available indicates that neither camera will have revolving back. Both the *Speed Graphic* and the *Crown Graphic* are said, however, to have a tilting, sliding, and rising lens mount. Prices of the new *Graphic* cameras have been advertised as follows: Model 23 (2¼ x 3¼), *Speed Graphic*, $221; *Crown Graphic*, $185. Model 34 (3¼ x 4¼), *Speed Graphic*, $204; *Crown Graphic*, $184. Model 45 (4 x 5), *Speed Graphic*, $207; *Crown Graphic*, $171. All these cameras are equipped with *Graflex* coated *Optar* lens in *Graphex* shutter or *Kodak* coated *Ektar* lens in *Supermatic* shutter.

The built-in focal-plane shutter, which is incorporated in every model, is the only unique feature of any consequence possessed by the *Speed Graphic*, and is presumably supposed to justify the high price charged for this camera. With a focal-plane shutter, the photographer can use a lens in an ordinary or barrel mount, since an inter-lens shutter is not required. If several different lenses are to be used interchangeably, the saving in shutters would be an important factor. As a matter of fact, however, most *Speed Graphic* users appear to prefer to use a lens already mounted in an inter-lens shutter; we understand that the company will not sell the *Speed Graflex* without a lens (and of course the inter-lens shutter that goes with it). It is also not clear whether the camera can be purchased without an inter-lens shutter and fitted instead with a lens in barrel (for example, a telephoto lens). The implication is therefore, that the focal-plane shutter is unnecessary; the focal-plane shutter is a sort of stock-in-trade of the Graflex organization, but there are few purposes for which the focal-plane shutter would do a better job than today's best inter-lens shutter. The advantage is all with the inter-lens shutter, since it is easier to use, is more quiet in operation, and is more suitable for use with synchronized flash. At least one commercial photographer, who uses a number of *Speed Graphics*, makes it a practice to cut out the curtain of the focal-plane shutter of each *Speed Graphic* which he buys, because of unfortunate experiences in having operatives return from assignments with unexposed negatives as the result of the curtain being in the closed position when exposures were made with the front shutter. The bulk and weight of the *Speed Graphic* could be considerably reduced by omission

of the focal-plane shutter. A revolving back could also be added—a desirable feature.

The prospective purchaser of a camera of this type would do well to consider whether a used camera of much lower cost would not serve his purpose as well. One of the European type, such as the *Kawee, Zeiss Maximar, Voigtlander Avus* or *Tourist, Ikon Ideal*, or perhaps the *Kodak Recomar*, etc., has less bulk and weight than has the *Speed Graphic;* these cameras are of less rugged construction and will not stand as much abuse as the *Speed Graphics*, such as being dropped from a considerable height, but if used by a reasonably careful amateur, will be fully as satisfactory as the more costly *Speed Graphic*. They may be adapted easily to use regular *Graflex* accessories.

A few cameras of wooden construction are coming on the market, and should be considered and examined; among them are the *Watson* and the *Busch*, which are not equipped with focal-plane shutters. (These cameras have not, as yet, been tested by CR.)

Another possibility is the purchase of one of the new and compact "view"-type cameras, now available in the 4 x 5 in. size. These have the advantages of such adjustments as reversing or revolving back, swing back, and/or swing front, back-focusing, etc., which adapt them to a much wider range of work than can be done conveniently with a rigid-back camera. Among them are the *Crown View, Deardoff, Graphic View, Newton, Brand* and *Burke & James Grover*. There were a few of the European-type hand cameras which had some of these desirable features (and the *Linhof*, which had them all), but they would probably be hard to find in the used-camera market, and the first-rate ones among them would almost certainly be overpriced.

Finally, it may be possible to find at a reasonable price one of the old-style plate cameras, which can be put into reasonably good condition with a little work, provided with sheet film sheaths, and used until the choice of new cameras becomes wider. The best of these were the *Century* and *Graphic* (not *Speed Graphic*); others were made under such names as *Conley, Hawkeye, Korona, Poco, Premo, Seneca*. The lens and shutter will no doubt be of an out-of-date type, and hence relatively useless now, but it is a simple matter to adapt another lens and shutter, particularly if the camera has a removable lens board.

Copper Sulphate Clears Tree Roots from Sewers

IN the April 1946 BULLETIN, there appeared an article "Cleaning Tree Roots Out of Sewers,"[1] in which it was stated that copper sulfate crystals introduced into a sewer partly plugged by tree roots would be helpful in opening up the sewer line.

CR is pleased to report that a good technical authority has found merit in the method of discouraging root growth outlined in CR's article. (As the article itself indicated, there was some doubt about the efficacy of the method when the discussion was prepared.) Dr. Paul E. Tilford of the Department of Botany and Plant Pathology at the Ohio Agricultural Experiment Station has now recommended the treatment, saying that in a high percentage of cases satisfactory results are obtained.

The method is simple. A quantity of copper sulfate crystals is introduced into the sewer through a cleanout opening, manhole, or even the toilet bowl, and the treatment repeated at intervals during the growing season. Root growth does not occur in winter months, but may begin early in the spring where roots are close to sewers through which relatively warm water flows. Rural homeowners who are confronted with the problem would be well advised to begin treatment as soon as signs of stoppage are noted.

[1]The April Bulletin is now out of stock, but a fair number of tear sheets of the article, containing a more detailed discussion of the method, can be had if desired, at a charge of 10 cents (postage included).

"*Life*" Water Repellent and Conditioner

ONE of the things that newspapers and home magazines in their descriptions of the post-war dream world have been promising the American housewife is a water-repellent material that could be applied to fabrics at home. Fabrics treated by the coming methods were supposed to resist moisture and soil. Junior could spill grape jam on the tablecloth without fear of reprimand, or, at the very least, without fear of causing serious or permanent injury to the fabric; and, as it was put in one advertising film, the young man who had the misfortune of spilling a drink on his lady's gown could avoid further embarrassment by pouring a pitcher of water on it, too, whereupon everything would be as before.

A water repellent and conditioner called *Life* is now being sold in larger department stores. (It was formerly called *Colacet.*) *Life* is made by the Franklin Research Co., Philadelphia, and sells at 75c a pint, $1.39 a quart. Analysis of the product indicated a composition of: paraffin wax (149°C type), 19%; aluminum acetate (20% type), 45%; starch, 0.7%; water, 35.3%.

The material is easily applied, the procedure outlined on the bottle label being as follows: Clothes to be treated are washed and rinsed as usual, wrung out, and dipped in a solution made of one cup of the repellent to six quarts of water; they must be soaked well, agitated, wrung out, and ironed before dry.

In tests made for Consumers' Research, wool, silk, cotton, and rayon fabrics were treated and were then given tests for water repellency and resistance to staining, using the standard spray test for water repellency. It was found that *Life* imparted satisfactory water-repellent properties to most of these fabrics when applied in accordance with the instructions printed on the label. However, the degree of water repellency produced was dependent upon the basic construction of the fabric to be treated. With open-weave rayon, for example, effective waterproofing was not obtained either before or after washing and dry cleaning; with cotton, results were only fair, when the product was tested after dry cleaning and after washing with water; with wool, the results were very good in the original sample, good after dry cleaning, and fair after washing, but the wool sample was stiffened when washed, which would indicate that the product was unsuitable or undesirable for woolen garments which would be subject to washing. (It should be noted, however, that the bottle labeling does not specifically recommend the product for use on woolen materials.)

With silk, results were very good. On close-weave rayons, results were very good on the original sample, fair after dry cleaning, and fair after washing. The study indicated that the product would in general be considered satisfactory only where it would not be too inconvenient to re-treat the fabric following dry cleaning or washing, as the *Life* method is a temporary treatment at best, and does not afford the kind of results that can be gotten with factory processing. It was considered, however, that this method gives results that are comparable with others which are offered for home use and which correspond to the designation of "rainproof."

Rainwear for ultimate consumers is classified into three principal groups: *waterproof*, *rainproof*, and *showerproof*. A *waterproof* coat gives complete protection, as it is actually impenetrable to water, but has the disadvantage of being hot and uncomfortable to wear on any but really cold days. Coats which are *water repellent, show-*

Stain	*Wool*	*Silk*	*Cotton*	*Rayon*
Ink	Very slight	Very slight	Very slight	Very slight
Coffee	" "	" "	" "	" "
"Soda Pop"	" "	" "	" "	" "
Meat Sauce	Slight	Slight	Slight	Slight
Mustard	Appreciable	Appreciable	Appreciable	Appreciable

Results of Straining Tests on *Life*-Treated Fabric

erproof, or *shower resistant* have been treated by processes which close the pores of the fabric against passage of water but not of air, and hence permit some degree of ventilation. Some of the processing materials used are to some extent fast to washing or dry cleaning, while others are not. *Showerproof* garments give the least protection against rain; a *rainproof* garment gives better protection; and *waterproof* the best protection (with the disadvantages already mentioned).

In the staining tests, portions of the *Life*-treated fabrics were suspended at an angle of approximately 45°; ink, coffee, soda pop, meat sauce, and mustard were dropped on the samples from a height of about six inches. The water-borne staining substances, ink, coffee, and soda, rolled off all the treated fabrics, and any excess that did adhere to the surface could be readily shaken off. The treatment with *Life* prevented the meat sauce and mustard from penetrating the fabric and migration of the staining material was limited to such an extent that the excess staining substance could be removed by scraping. Results of the staining test are shown in the table at the foot of page 25.

It was evident that the *Life* water repellent and conditioner imparted satisfactory stain-resistant and water-repellent properties to the fabrics tested, and in the opinion of a well-qualified textile testing laboratory, compared favorably with other preparations marketed for consumer use, for the same purpose.

Compasses for the Motor Car

WHILE several of the makes of automobile compasses now on the market are well made and accurate, making them operate within a car is an entirely different matter. The steel body of the car forms an effective shield around the compass, and thus the only areas through which the magnetic force of the earth can penetrate are the windows and windshield. On convertible or open touring cars the difficulty is not so great, but still exists. For example, the only place where CR's investigator was able successfully to mount a compass recently so that sufficient magnetic force was available for operation, was on the rear of the windshield and above the instrument panel. The car did not have a center windshield bar, and if there had been one, possibly even this position would not have served to give accurate readings.

Most compasses now marketed either have the compensator mounted inside the case below the needle or its equivalent, or in older designs it may be in a separate case which has to be mounted below the compass itself. The purpose of the compensator is to correct for the variations in the NS magnetic force of the earth that are produced by individual characteristics of the car body. Correct adjustment of the compensator is essential to get a true NS reading.

The compensator in a sense weakens the magnetic force which permeates the car; thus, in many cases, insufficient directive force remains to make the compass reliably responsive to changes in direction. In such cases the only remedy, if any exists, is to try another location for the compass.

If anyone feels that he may have need to know his direction, our recommendation is that a reliable pocket compass be carried, perhaps in the glove compartment of the car. This can readily be used at a sufficient distance from the car (20 feet or more, easily determined by trial), so that the iron and steel in the car will not influence the accuracy of reading.

★★★ Price Changes on Articles Listed in CR Bulletins ★★★

PRICES have changed so rapidly during the last several months that it has not been practicable to issue notices of price changes for the many items listed in recent BULLETINS. Prices shown in the BULLETIN articles will normally be the prices that prevailed when the test was begun, sometimes at the time of going to press. Consumers will find in some cases that prices may be somewhat higher (in a few cases, lower) at a later date. However, it seems likely at this time that there will be a period of relative price stability, and that in the reasonably near future, a downward trend will be in evidence, particularly on "overpriced" items such as electrical appliances, radio receivers, clothing, and many other manufactured articles.

The 1947 Automobiles

THE AUTOMOBILES of 1947 will not present revolutionary changes, except possibly in one or two cars of new makers who have not been in volume production up to this time. No radical changes in automobile design are expected for the near future, for the manufacturers feel they have plenty to do to produce cars of conventional construction and design, except for those changes which are alalways being made in front-end grilles, door handles, and the like, in order to make the consumers feel that this year's car is different from last year's. Manufacturers would be foolish to take the risks involved in undertaking new production problems at a time when they can sell all the cars they can make and a great many more besides.

Thus it may be assumed that the old-line manufacturer will continue with existing designs, so long as those are satisfactorily absorbed by the market, and until labor and production conditions improve generally to a point where prices can be perhaps somewhat reduced over those current in today's "sellers' market."

General Motors have been reliably reported to have held up orders for new body dies for the smallest of the three basic body types used on all cars of their manufacture. (GM has three bodies for the cars in its line: the smallest is used on *Chevrolet* and the smaller *Pontiac* and *Oldsmobile;* the medium type is used on the larger *Pontiac*, and certain *Oldsmobiles*, and two *Buicks;* and the largest body on the largest *Oldsmobiles*, *Buicks*, and *Cadillac* cars. The designers have, of course, worked out minor variations for giving the several cars differences in appearance, but the actual space available for passengers in each brand of car in a given group is the same.)

The delay in the ordering of dies for the small body would indicate that more extensive changes than originally planned may be made before the GMC 1948 cars are announced. It is quite possible that the current popularity of the radically changed body lines typified by the *Studebaker* will exert a strong influence on designs for all makes of 1948 cars.

As the quality of the 1947 cars in general seems to be below that of the 1941 models, and as unusual production problems still continue in all the factories, no car has been given a full *A* rating. *A-Minus* (*A*-) is the highest rating assigned at this time.

Defects, some of a fairly serious character, are much more common in the new cars than in pre-war models; some of these troubles are attributed to carelessness on the part of employees who do not seem to care, as they did in times past, whether they do a good and careful job. Typical of such flaws are defective paint and chromium plating, rubber seals around doors not properly attached, loose and sometimes missing bolts, leaking windshields, and castings improperly cleaned. One owner even reported that the piston rings were lacking in his engine. It must be recognized that these are not necessarily reflections on the manufacturers, who have been carrying a herculean burden in their efforts to make automobiles in the face of tremendous obstacles of supply shortages, difficulties with strikes, and with supervision and inspection, etc., of serious magnitude.

The semi-automatic transmissions have the serious disadvantage that goes with many complicated mechanisms, in their special vulnerability to injury or maladjustment. These units cannot be as surely or satisfactorily serviced as the traditional gear-drive arrangements, and no one but a factory-trained workman *familiar with the particular drive* should ever be permitted to work on one. (Outside of the very largest cities, strictly qualified service may be impracticable to obtain under any circumstances. Therefore a person who uses a car with semi-automatic transmission for travel to distant places runs a definite risk of being unable to return "under his own power.") There are also other disadvantages under certain driving conditions, as for example when ice and snow are a problem. For some persons, probably complex transmission systems may be undesirable until the mechanism is so arranged that a conventional hand-shift gear drive can be thrown in when necessary or in case of any sort of failure of the automatic-shift unit.

Cars equipped with *Hydra-matic* transmission are *Cadillac* ($186 extra) and *Oldsmobile* ($142 extra); *Chryslers* are available with "*Fluid Drive*" and hydraulic transmission, *De Soto*

(*Discussion continued on page 30*)

1947 Cars	1 Price f.o.b. factory	2 Price delivered N.Y.C.	3 Wheelbase, inches	4 Overall length, inches	5 Maximum brake horsepower at stated revolutions per minute	6 Horsepower per cubic inch of piston displacement	7 Engine revolutions per mile
Crosley	$905	$949*	80	145	26.5 at 5400	0.6	5205
Willys	▲	▲	▲	▲	▲	▲	▲
Chevrolet Stylemaster	1123	1255	116	198	90 at 3300	0.42	2918
Chevrolet Fleetmaster	1194	1330					
Plymouth De Luxe	1164	1326	117	197	95 at 3600	0.43	2769
Ford 6 De Luxe	1154	▲	114	198	86 at 3300	0.40	2684
Ford 6 Super De Luxe	1195	1339					
Ford V8 De Luxe	1204	▲	114	198	100 at 3800	0.42	2513
Ford V8 Super De Luxe	1279	1428					
Nash 600	1320	1513	112	200	82 at 3800	0.41	2948
Pontiac 6 Torpedo	1331	1487	119	204	93.5 at 3400	0.39	2911
Dodge De Luxe	1339	1500	119½	205	102 at 3600	0.44	3050
Pontiac 8 Torpedo	1376	1534	119	204	107.5 at 3700	0.43	2911
Studebaker Champion De Luxe	1388	1443	112	193	80 at 4000	0.47	3313
De Soto De Luxe	1461	1649	122	207¼	109 at 3600	0.44	2804
Chrysler Royal	1561	▲	121½	208	114 at 3600	0.41	2804
Mercury	1462	1639	118	202	100 at 3800	0.42	2545
Oldsmobile 6-76	1568	1628	125	213	100 at 3400	0.42	2783
Hudson 171	1574	1622	121	207	102 at 4000	0.48	2918
Buick 40 Special	1580	1639	121	207	110 at 3600	0.44	3090
Nash Ambassador	1589	1841	121	209	112 at 3400	0.41	2948
Oldsmobile 8-78	1624	1686	125	213	110 at 3600	0.43	2992

* Does not include state taxes.
▲ Information not available.

	8 Piston displacement in thousands of cubic inches per mile	9 Weight, estimated, lb.	10 Performance factor	11 Tire size	12 Tires adequate? (i.e., not overloaded)	13 Brake factor	14 Tentative ratings	15 Comments
	229	1180	16.2	4.50 x 12	Yes	39	*B* –	Very high number of engine revolutions per mile, indicating likelihood of high rate of engine wear.
	▲	▲	▲	▲	▲	▲	▲	Not scheduled for production until mid-1947.
	316	3130	23.2	6.00 x 16	No	42	*A* –	Rated second among "big three" (*Ford*, *Plymouth*, *Chevrolet*). Good riding comfort, satisfactory performance, and life, for average drivers.
	302	3082	24.9	6.00 x 16	No	41	*A* –	Rated third among "big three." Considered very good buy in "low-price" field.
	303	3233	21.6	6.00 x 16	No	41	*A* –	Riding qualities for normal driving considered not as good as *Plymouth* or *Chevrolet*.
	301	3266	25.0	6.00 x 16	No	40	*A* –	Rated first among "big three." A good car for those who require high speed, stability, and ability to withstand hard use. See comment under *Ford 6*.
	254	2826	23.0	6.00 x 16	Yes	40	*B*+	Good economy. Only minor troubles reported.
	348	3320	23.0	6.00 x 16	No	39	*A* –	Judged preferable to *Oldsmobile 6*.
	407	3256	25.5	6.00 x 16	No	43	*B*	Little change from previous years. A considerable number of drive shaft (universal joint) failures have been reported.
	362	3405	25.8	6.00 x 16	No	38	*A* –	Tires considerably overloaded. A good car for those who desire an 8-cylinder engine.
	281	2735	23.0	5.50 x 15	No	42	*A* –	Good performance and economy.
	332	3428	26.2	6.50 x 15	No	42	*A* –	No significant mechanical troubles reported. Judged a good car.
	351	3523	26.8	6.50 x 15	No	41	*A* –	Some trouble reported with fluid drive.
	305	3298	24.8	6.50 x 15	Yes	40	*A* –	Little justification for purchasing this car over *Ford V8*.
	331	3525	23.4	6.50 x 16	No	37	*A* –	
	309	3110	26.4	6.00 x 16	No	36	*B*	Price considered high for quality obtained.
	383	3720	24.6	6.50 x 16	No	36	*A* –	Clutch trouble frequently reported.
	346	3412	27.0	6.50 x 15	No	42	*B*+	Has much larger engine than *Nash 600*.
	383	3655	25.0	6.50 x 16	No	41	*B*	8-cylinder engine judged not particularly advantageous with *Hydramatic* transmission. Brakes larger than on *Oldsmobile 6's*.

1947 Cars	1 Price f.o.b. factory	2 Price delivered N.Y.C.	3 Wheelbase, inches	4 Overall length, inches	5 Maximum brake horsepower at stated revolutions per minute	6 Horsepower per cubic inch of piston displacement	7 Engine revolutions per mile
Studebaker Commander	1658	1723	119	204	94 at 3600	0.41	3112
Hudson 8 Super 173	1687	1735	121	207	128 at 4200	0.50	2918
Packard 6 — 2182	1745	1810	120	208	105 at 3600	0.43	3091
Buick 50	1822	1884	124	212	110 at 3600	0.44	3090
Chrysler Saratoga	1863	▲	127½	214	135 at 3400	0.42	2679
Kaiser K-100	1868	2063	123½	203	100 at 3600	0.44	3070
Packard 8 — 2112	1947	2014	120	208	125 at 3600	0.44	2947
Frazer F 47	2053	2253	123½	203	100 at 3600	0.44	3070
Buick 70	2110	2177	129	217	144 at 3600	0.45	2817
Cadillac V8 61	2203	2267	126	215	150 at 3400	0.43	2590
Lincoln	2240	2478*	125	218	125 at 4000	0.43	▲
Packard 8 — 2172	2391	▲	127	215	165 at 3600	0.46	2693
Cadillac V8-75	4340	4415	136	227	150 at 3400	0.43	2780

* Does not include state taxes.
▲ Information not available.

with "*Fluid Drive*" and *Tip Toe* transmission, *Dodge* with "*Fluid Drive.*" The *Studebaker* transmissions can be equipped with overdrive controlled by a speed-responsive mechanism and solenoid.

In the table of listings which follow, Col. 6, *Horsepower per cu. in. of piston displacement* gives a measure of the efficiency of the engine. Col. 7, *Engine revolutions per mile of car travel in high gear* (not in overdrive or with fourth speed in transmission) gives a measure of the probable or expected rate of engine wear. Col. 8, *Piston displacement in cu. in. per mile* is a measure of economy in use of gasoline and oil. Col. 10, *Performance factor* is a measure of the relative ability of the car to respond quickly and powerfully when the accelerator pedal is depressed. This figure is obtained by dividing the maximum horsepower of the car by its weight plus 750 lb. (which represents the average added load in normal size cars, for five passengers), and multiplying the result by 1000 (to avoid fractional numbers). The larger the number, the higher the relative "performance." It should be noted that this method of judging a car assumes that the gear ratio and tire size have been adjusted by the manufacturer so that maximum car speed occurs at an engine speed just a little above the speed at which maximum horsepower is developed. Col. 13, *Brake factor* is indicative of the probable relative life of the brake linings, which is important from the standpoint of maintenance and safety of the car. The figures are obtained by dividing the total area of the brake linings in square inches by the weight of the car

8 Piston displacement in thousands of cubic inches per mile	9 Weight, estimated, lb.	10 Performance factor	11 Tire size	12 Tires adequate? (i.e., not overloaded)	13 Brake factor	14 Tentative ratings	15 Comments
352	3265	23.5	6.50 x 15	Yes	44	*A* –	Many regard this car as having exceptionally good styling.
370	3260	32.0	6.00 x 16	No	35	*B*	Has desirable hydraulic-mechanical braking system.
381	3520	24.6	6.50 x 15	No	39	*B*	Essentially the same as previous models.
383	3910	23.7	6.50 x 16	No	35	*A* –	See comment on *Buick 40*. Tires much overloaded.
333	3972	28.6	7.00 x 15	No	40	*A* –	
347	3305	24.6	6.50 x 15	Yes	43	*B* –	Judged overpriced. Replacement parts may be a problem.
415	3695	28.2	6.50 x 15	No	39	*A* –	
347	3365	24.4	6.50 x 15	No	43	*B* –	Judged overpriced. See comment on *Kaiser*.
451	4190	29.2	7.00 x 15	No	42	*A* –	See comment on *Buick 40*.
448	4165	30.7	7.00 x 15	No	42	*A* –	
▲	4015	26.3	7.00 x 15	No	38	*A* –	
479	4025	34.6	7.00 x 15	No	44	*A* –	Unusually good performance.
481	4875	26.8	7.50 x 16	Yes	41	*A* –	

plus 750 lb.

The accuracy of the prices shown cannot be guaranteed, for attempts to get the information from the manufacturers have brought the surprising result, in a number of cases, that the manufacturer claims not to know the price at which his car will sell; that such prices are established by the dealer in each city. We have our doubts about the correctness of this statement, but, anyway, "that's their story." Furthermore in certain makes it is difficult if not impossible to buy a car without having to pay for the so-called "optional" accessories.

As another illustration of the present complications of automobile price structure, the price of the *Buick 40 Special* is broken down as follows: base price $1468, federal tax $87, freight $59, delivery and handling $25, making a total of $1639 (not including any city and state taxes). So far as is known, the difference between the standard models (known in the trade as De Luxe) and special models, usually known as Super De Luxe or "Custom" models (e.g., *Fleetmaster* for *Chevrolet*, *Special De Luxe* for *Plymouth*, *Custom* for *Dodge*) is made up solely of accessories and details of finish. With some makes of cars, it may be impossible to obtain a standard model (that is a model lacking such items of equipment as higher grade upholstery, electric cigar lighter, clock, horn ring, and arm rest on the right side). It may also be necessary to buy accessories, whether the consumer wants them or not; in the *Buick 40 Special* the prices of these are: radio $69.93, radio antenna $7.90, heater and defroster $54.45, window washer $5.25, special steering wheel $16.40, clock, lighter, etc., $26.25, rear wheel shields $17.05, *Foam-Tex* cushions $18.25. One *Buick* dealer reports that some *Buick 40's* are

coming through without the extra equipment, but other *Buick* cars arrive fully equipped (meaning, no doubt, equipped with a number of things the average customer will not want to have, but will buy anyway—or wait a long time for his delivery).

This report on 1947 automobiles is not based on exhaustive tests, but on the opinions of qualified automotive engineers, checked against the results of a survey made within the last few months for CR of 633 owners of new 1946-1947 cars. This survey covered individual owners and some taxicab owners operating fleets of standard 4-door sedans. (Members of the latter group were excellent sources of information, for with an average daily mileage of about 200, defects showed up much more quickly than they would have in normal private use of a car.)

Additional Comments

Comments on certain makes are given below.

Crosley

Previous difficulties with brazing in assembly of steel engine parts now believed overcome. Valve action rather noisy. Some, if not all, bodies are of steel, instead of aluminum as originally announced.

This car might be considered a satisfactory value if sold at a considerably lower price, but is considered so only for those who may be able to use it effectively considering its size and other limitations and who expect to operate the car under traffic conditions where its exceptionally small size does not involve special driving hazards. (On heavily traveled roads there are real dangers in driving any abnormally small car, because of the great width, height, length, and road- and traffic-hiding bulk of many present-day trucks. The hazard is not only for the driver of the small car, but for the driver of another car who in passing a truck without knowledge of the small car ahead of it, finds his re-entrance into the traffic line blocked.)

Studebaker Champion

Body styling considered forerunner of styles for other makes of cars for 1948. Owners are enthusiastic about the new body design, which provides greatly improved vision especially toward the rear (4-door sedan windshield has been increased 1 sq. ft. and rear window 1½ sq. ft. in area over previous model); seats are about 10 in. wider. Narrower (54 in.) rear tread than front (56¼ in.) considered objectionable by some drivers, as some filling-station lifts are designed for current tread widths of average cars (approximately 60 in.). Engine revolutions about 10% per mile above average of other cars in its price range (somewhat undesirable).

Ford

A large majority of owners reporting on both the *Ford 6* and the *V8* have found these cars completely satisfactory.

Plymouth

Some criticism by hard drivers as to deficient ruggedness. Seats and cushions definitely inferior to those of pre-war cars. Fabrics wear more rapidly and there have been many seat-spring failures, presumably due to poor steel.

Chevrolet

Complaints on this car have been minor; the majority of users queried have found the car completely satisfactory.

Hudson

This make seems to suffer from a lack of popularity which is probably due to its lack of appealing style, or at least along lines the public considers appealing at this time. Engine is of somewhat lighter construction than in many other cars and will possibly have a shorter life before replacement parts are required. Replacement parts are said to be more difficult to obtain than for most other makes. For normal use, and if driven at conservative speeds, it is considered that the *Hudson* should give satisfactory service.

Dodge

Quite a number of failures of "drive shaft" universal joints and "*Fluid Drive*" have been reported by taxi operators. No such failures, however, have been reported by private owners, which may mean that such failures are not likely to develop until after expiration of guarantee period. Seats and cushions inferior to those in pre-war cars.

Mercury

Better upholstery fabrics and trim than *Ford;* longer wheelbase somewhat improves riding comfort. Complaints on this car have been minor.

Oldsmobile

Over 30 owners of these cars have reported chromium plating as inferior in that rust spots have appeared quickly.

Kaiser and Frazer

While automobiles in general are difficult to obtain, *Kaiser* and *Frazer* cars are available at this time, but apparently are not selling well. Their high prices and the fact that they do

[Concluded on page 39]

PHONOGRAPH RECORDS

By Walter F. Grueninger

Please Note: Prices quoted do not include taxes. In the ratings AA indicates highly recommended; A, recommended; B, intermediate; C, not recommended.

READERS ask what phonograph equipment I use when listening to records. The principal parts of my equipment follow:

Admiral sapphire needle; *Audax D38H* magnetic pickup; two-speed *Garrard* turntable; amplifier made by Florac Electronic Laboratory, 246 E. 46 St., New York 17 (beam power tubes, 50% inverse feedback), with three tone controls — one for each speaker; at the opposite corner of the room on casters is a separate speaker cabinet measuring 20 in. x 32 in. x 54 in. lined with *Ozite* padding 1½ in. thick which houses four permanent-magnet speakers. Hooked up in parallel are an *HF-1 Atlas* (Atlas Sound Corp., 1443 39 St., Brooklyn 18, N.Y.) and a 5-in. *Cinaudagraph* speaker (a pre-war product, no longer manufactured). (These two are the high-frequency units or "tweeters.") In separate circuits are the low-frequency units, a 13-in. and an 18-in. *Cinaudagraph*.

So far as good listening qualities are concerned, I have heard no commercial phonograph even up to $1500 that I would exchange for this equipment. (Today's cost of this equipment runs between $900 and $1000.)

ORCHESTRA

Music of Morton Gould. Robin Hood Dell Orchestra of Philadelphia under Gould. 8 sides, Columbia Set 668. $5. Written with facility but, for the most part, empty music. Performance authoritative, recording just a little below today's best. Some surface noise.
Interpretation AA
Fidelity of Recording A

Handel-Beecham: *The Great Elopement.* London Philharmonic Orchestra under Beecham. 6 sides, Victor Set 1093. $3.85. A delightful work conceived for ballet by Beecham, consisting of relatively short, unknown Handel works. English recording, which lacks the high frequencies of our best domestic, though it is excellent in other respects.
Interpretation AA
Fidelity of Recording A

Khachaturian: *Gayne* Ballet Suite. Philharmonic-Symphony Orchestra of New York under Kurtz. 6 sides, Columbia Set 664. $4. A fascinating ballet, dating from 1942. Its strong flavor of Near East folk melodies and expert orchestration may please those who merely "know what they like" in music as well as the critical symphony subscriber. Incisive performance and top notch recording. **Interpretation AA**
Fidelity of Recording AA

Prokofieff: *Symphony No. 5.* Boston Symphony Orchestra under Koussevitzky. 10 sides, Victor Set 1095. $5.85. A new, complex, highly regarded work first offered on records several months ago in the Rodzinski-Philharmonic-Columbia Set 661. Koussevitzky introduced the work in America in 1945. Little to choose between two excellent sets with Victor's performance just a hair's breadth more beautiful and Columbia's recording a mite "smoother."
Interpretation AA
Fidelity of Recording A

Rimsky-Korsakoff: *Russian Easter Overture.* Philadelphia Orchestra under Ormandy. 4 sides, Columbia Set X276. $3. Ormandy fails to get as much excitement out of the music as Stokowski (Victor Set 937). But Ormandy's surfaces are quieter and his fidelity rating for strings is a little higher. Overall, Stokowski preferred. **Interpretation A**
Fidelity of Recording AA

Sibelius: *Symphony No. 4.* Philharmonic-Symphony Orchestra of New York under Rodzinski. 8 sides, Columbia Set 665. $5. A gloomy, strange work. Exceptional performance, transparent recording. Tops Stokowski's Victor Set 160.
Interpretation AA
Fidelity of Recording AA

Stravinsky: *Le Sacre du Printemps.* San Francisco Symphony Orchestra under Monteux. 8 sides, Victor Set 1052. $4.85. Composed for a ballet of pagan Russia. The unconventional, dissonant, restless music led to fighting among spectators at the original performance in 1913, conducted by Monteux. Harsh recording. The competition (Columbia Set 417) is somewhat less effectively recorded but it offers a definitive reading—the composer conducting the New York Philharmonic. **Interpretation AA**
Fidelity of Recording A

CHAMBER AND INSTRUMENTAL

Beethoven: *Grosse Fuge* (Op. 133). The Kroll Quartet. 4 sides, Musicraft Set 73. $2.85. Originally the last movement of Op. 130. A challenging, ungrateful work played robustly. **Intrepretation A**
Fidelity of Recording B

Beethoven: *Sonata in C Sharp Minor* ("Moonlight"). Horowitz (piano). 4 sides, Victor Set 1115. $2.85. The sonata nearly everybody enjoys. The first movement is played with restraint; the second lacks the lightness some other virtuosi give it; the third is electrifying. Recording good but surface noise on my set, particularly side two, nearly ruins everything. If you find a set without this blemish, it's the "Moonlight" to buy. **Interpretation AA**
Fidelity of Recording AA

Beethoven: *Sonata No. 8* ("Pathétique"). Rubinstein (piano). 4 sides, Victor Set 1102. $2.85. A popular, early Beethoven sonata splendidly performed and recorded. Overall, this is the "Pathétique" you should own.
Interpretation AA
Fidelity of Recording AA

Harris: *Soliloquy and Dance* (4 sides) & **Benjamin:** *Elegy, Waltz* and *Toccata* (4 sides). Primrose (viola). Victor Set 1061. $4.85. Musicianly, modern works for the connoisseur performed by a distinguished violist with piano accompaniment. The recording of the Benjamin offers more body and clarity than the Harris. **Interpretation AA**
Fidelity of Recording A

Mozart: *Sonatas for Violin and Harpsichord.* Schneider (violin), Kirkpatrick (harpsichord). 12 sides, Columbia Set 650. $5. Included are K296, 378, 379—three of Mozart's best sonatas for these instruments. Sensitive ensemble playing excepting for the occasional pounding of Kirkpatrick. Schneider's tone, however, is more wiry than I have observed in the concert hall. It improves when high frequencies are attenuated. Balance exceptionally good.
Interpretation A
Fidelity of Recording A

Shostakovich: *Trio* (Op. 67). Shostakovich, Tzyganov, Shirinsky (piano, violin, cello) (9 sides) and *Two Preludes.*

Shostakovich (piano) (1 side). Compass Set 102. $6.25. For connoisseurs only and let them not think this is music to be cherished. First piano performances of Shostakovich heard in this country. Recording of bass—full; but high frequencies, particularly the violin, are thin and nasal. Audible surfaces. A nuisance is the fact that these Russian-recorded and -pressed 10-inch disks must be turned every 3 minutes or less.
Interpretation AA
Fidelity of Recording C

Harmonica Classics. Sebastian (harmonica). 8 sides, Victor Set P166. $3. Sebastian is a skilled performer on an instrument limited in scope. "Malaguena," "Bach's Aria," "Maid with the Flaxen Hair," and others including some originals.
Interpretation AA
Fidelity of Recording AA

Organ Recital. Courboin (organ). 6 sides, Victor Set 1091. $3.85. Short numbers which fail to hold my interest at one sitting. "Silent Night," "Jesus My Lord," "Ave Verum," "Adoration," etc.
Interpretation A
Fidelity of Recording B

Isaac Stern in Violin Selections from "Humoresque." 8 sides, Columbia Set 657. $5. Short display pieces from the film, including an atrocious 3 side composition, "Excerpt from Tristan und Isolde." Included are "Humoresque," "Flight of the Bumble Bee," "Zigeunerweisen," "Carmen Fantasy." Well played. Recorded with orchestra too distant, "Tristan" giving forth a piercing tone less evident in other selections.
Interpretation AA
Fidelity of Recording A

Violin Recital. Francescatti (violin). 6 sides, Columbia Set 660. $3.25. Expert playing and recording of encore numbers, including "Maid with the Flaxen Hair," "Minstrels," "Tartini—Variations on a Theme of Corelli," etc. Considerably more desirable than Stern's set.
Interpretation AA
Fidelity of Recording AA

VOCAL

Brahms: *Liebeslieder Walzer.* RCA Victor Chorale, Luboshutz and Nemenoff (duo-pianists) under Shaw. 6 sides, Victor Set 1076. $3.85. Eighteen waltzes of no particular charm. Well performed and recorded with commendable balance between pianos and voices. Tops competitive Musicraft Set 14 in performance and engineering.
Interpretation AA
Fidelity of Recording AA

Schubert: *Songs from Die Schöne Müllerin.* Crooks (tenor). 6 sides, Victor Set 1067. $3.85. Twelve of the 20 songs which compose this great cycle. Mr. Crooks' performance lacks the color, contrasts, and imagination one expects in an outstanding performance. Recording favors voice over piano.
Interpretation C
Fidelity of Recording A

Songs of Rachmaninoff. Tourel (mezzo-soprano). 6 sides, Columbia Set 625. $4. The most familiar of these ten songs sustain my interest but heard at one sitting, the album is dull. The quality of Miss Tourel's voice as here recorded does not enchant me but her musicianship is praiseworthy.
Interpretation A
Fidelity of Recording A

Songs of Richard Strauss. Lehmann (soprano). 4 sides, Columbia Set X270. $2.50. Probably Strauss' most admired songs, all refreshing. Lotte Lehmann, foremost lieder singer in America, is in rare form. "Dry" recording with balance unfavorable to the piano and excessive surface noise. Included are "Ständchen," "Morgen," "Allerseelen," "Zueignung."
Interpretation AA
Fidelity of Recording B

Irish Songs. Melton (tenor). 6 sides, Victor Set 1090. $3.85. Of its kind, an outstanding set. Melton sings with conviction if not with the polished style of John McCormack. Included: "Rose of Tralee," "Mother Machree," "She Moved Through the Fair," "Macushla," etc.
Interpretation AA
Fidelity of Recording AA

Italian Operatic Arias. Traubel (soprano). 6 sides, Columbia Set 675. $4. "Ritorna Vincitor," "Ave Maria" from "Otello," "Vissi D'Arte," "Suicidio," etc., sung loudly but with little depth and nuance in the Italian style. Recording has an edge removed by attenuating high frequencies.
Interpretation B
Fidelity of Recording A

Oratorio Arias. Cordon (bass-baritone). 6 sides, Victor Set 1094. $3.85. Selections from Handel, Haydn, Bach, Mendelssohn sung in an agreeable full voice which lacks deep emotion and fine shading.
Interpretation A
Fidelity of Recording AA

Sincerely Yours. Stevens (mezzo-soprano). 8 sides, Columbia Set 654. $4. The best that can be said for Risé Stevens' performance of these old favorites is that she sings them simply. Recording sounds muffled. Included are "Love's Old Sweet Song," "The Rosary," "At Dawning," "A Dream," etc.
Interpretation A
Fidelity of Recording A

LIGHT, FOLK, AND MISCELLANEOUS

Herbert: *Eileen.* Greer, Carroll, Wrightson (singers). 8 sides, Victor Set K2. $4. One of Victor Herbert's best light operas. Adequate performance and excellent recording.
Interpretation A
Fidelity of Recording AA

Music of Sigmund Romberg. Kostelanetz and His Orchestra. 8 sides, Columbia Set 635. $4. Familiar waltz songs—"Auf Wiedersehen," "One Kiss," "Will You Remember," etc.—played suavely.
Interpretation AA
Fidelity of Recording A

All Time Favorites By Harry James (trumpet). 8 sides Columbia Set C117. $3. A collection of previously issued disks waxed by "the most successful trumpeter of this decade," according to the cover blurb. Best when James takes the solo. Included: "You Made Me Love You," "Flight of the Bumble Bee," "Concerto for Trumpet," "Sleepy Lagoon," etc.
Interpretation AA
Fidelity of Recording B

Boogie Woogie. Will Bradley and His Orchestra. 8 sides, Columbia Set C123. $3. *Boogie* numbers which "made Will Bradley a national favorite." One or two at a sitting will enliven any party; more may become monotonous.
Interpretation AA
Fidelity of Recording A

Folkmusic of the Central East: USSR. Singers and instrumentalists. 6 sides, Disc Set 132. $4.50. Recorded in the Soviet Union. Turkish-Armenian, Azerbaijan, Bukhar, Georgian, Uzbek music. Particularly valuable to study groups, although by our studio standards fidelity is poor.
Interpretation AA
Fidelity of Recording C

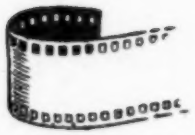
Woody Herman and His Woodchoppers (orchestra). 8 sides, Columbia Set C121. $3. A small orchestra lets loose in its best jazz style.
Interpretation A
Fidelity of Recording B

Beatrice Kay Sings (comedienne). 4 sides, Columbia Set C115. $3. Broad parodies of songs that were popular in gas lamp days. . . . .and later. "Curse of an Aching Heart," "Saloon," "Steamboat Bill," etc. Good recording of voice but the amusing vaudeville orchestra is too faint.
Interpretation A
Fidelity of Recording A

Rendezvous. Morton Gould and His Orchestra. 8 sides, Columbia Set 645. $5. Very fancy arrangements of "Night and Day," "Shadow Waltz," "Time on My Hands," "Stardust," etc.
Interpretation AA
Fidelity of Recording AA

Dorothy Shay Sings. 8 sides, Columbia Set C119. $3. "The Park Avenue Hillbillie's" songs are rather "sophisticated" and uneven in quality but a few sides will step up the pace of an adult party.
Interpretation A
Fidelity of Recording A

Songs by Charles Trenet. Sung by the Composer. 8 sides, Columbia Set 647. $4. Gay numbers of the cafe sung in French by a favorite of the smart set whose remarkable use of vocal "color" surmounts language barriers.
Interpretation AA
Fidelity of Recording AA



Ratings of Motion Pictures

THIS section aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines—some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Box Office, Charm, Chicago Daily Tribune, The Christian Century, Cue, Daily News (N.Y.), *The Exhibitor, Harrison's Reports, Motion Picture Herald, National Legion of Decency List, Newsweek, New York Herald Tribune, New York Times, Parents' Magazine, Release of the D.A.R. Preview Committee, Successful Farming, Time, Variety* (weekly), and *Unbiased Opinions of Current Motion Pictures* which includes reviews by the General Federation of Women's Clubs, the American Legion Auxiliary, National Film Music Council, and others.

The figures preceding the title of the picture indicate the number of critics who have been judged to rate the film A (recommended), B (intermediate), and C (not recommended) on its entertainment values.

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure
biog—biography
c—in color (Technicolor, Cinecolor, Trucolor, or Magnacolor)
car—cartoon
com—comedy
cri—crime and capture of criminals
doc—documentary
dr—drama
fan—fantasy
hist—founded on historical incident
mel—melodrama
mus—musical
mys—mystery
nov—dramatization of a novel
rom—romance
soc—social-problem drama
trav—travelogue
war—dealing with the lives of people in wartime
wes—western

A	B	C		
2	2	10	**Abie's Irish Rose**	*com AYC*
—	—	5	**Accomplice**	*cri-mel A*
1	10	—	**Adventuress, The**	*war-mel A*
—	—	7	**Affairs of Geraldine**	*mus-com A*
—	2	5	**Alias Mr. Twilight**	*cri-mel A*
—	5	2	**Angel and Sinner**	*dr A*
—	9	2	**Angel and the Badman**	*wes AYC*
1	8	8	**Angel on My Shoulder**	*fan A*
—	4	2	**Apache Rose**	*mus-wes-c AYC*
—	2	3	**Appassionata**	*mus-dr A*
—	7	2	**Arnelo Affair, The**	*mys-mel A*
—	—	6	**Backlash**	*mys-mel A*
—	4	5	**Bamboo Blonde, The**	*mus-war-rom A*
—	—	3	**Banjo**	*dr AYC*
—	2	13	**Beast with Five Fingers, The**	*cri-mel A*
—	2	5	**Beat the Band**	*mus-com A*
—	1	2	**Beauty and the Bandit**	*wes AYC*
—	9	4	**Bedelia**	*cri-dr A*
—	5	3	**Before Him All Rome Trembled**	*war-mus-dr A*
3	11	6	**Beginning or the End, The**	*war-dr AYC*
1	2	3	**Bellman, The**	*mel A*
—	1	3	**Bells of San Fernando**	*mel A*
—	4	4	**Below the Deadline**	*mel A*
9	5	1	**Best Years of Our Lives, The**	*war-dr A*
—	1	6	**Betty Co-ed**	*mus-com A*
—	2	3	**Big Town**	*dr A*
—	6	5	**Blaze of Noon**	*dr AYC*
—	2	4	**Blind Spot**	*mys-mel A*
—	3	3	**Blondie's Big Moment**	*com A*
—	2	4	**Blondie's Holiday**	*com AYC*
2	12	1	**Boomerang**	*cri-mel A*
—	2	1	**Born to Kill**	*cri-mel A*
—	—	6	**Born to Speed**	*mel AYC*
—	1	6	**Boston Blackie and the Law**	*cri-mel AY*
—	2	2	**Boy! What a Girl**	*mus-com AY*
—	6	5	**Brasher Doubloon, The**	*mys-mel A*
—	1	2	**Bridge of Sighs**	*mel A*
—	3	3	**Bringing Up Father**	*com AY*
—	1	6	**Brute Man, The**	*cri-mel A*
—	5	2	**Buck Privates Come Home**	*com AYC*
—	—	4	**Buffalo Bill Rides Again**	*wes AYC*
1	7	1	**Cage of Nightingales, A**	*dr A*
—	4	5	**Calcutta**	*cri-mel A*
—	5	4	**Calendar Girl**	*mus-com AY*
1	10	5	**California**	*wes-c A*
1	6	1	**Carmen**	*dr A*
—	5	2	**Carnegie Hall**	*mus-dr A*
—	6	3	**Carnival in Costa Rica**	*mus-com-c AY*
—	5	9	**Chase, The**	*cri-mel A*
—	5	4	**Child of Divorce**	*dr A*
1	7	3	**Children of Paradise**	*dr A*
—	—	6	**Cigarette Girl**	*mus-com A*
—	1	3	**Clandestine**	*war-dr A*
—	2	3	**Code of the West**	*wes AYC*
—	3	—	**Conquest of Cheyenne**	*wes AYC*
—	1	6	**Danger Street**	*cri-mel A*
—	4	6	**Dangerous Millions**	*cri-mel AYC*
—	1	5	**Dangerous Money**	*mys-mel AYC*
—	1	3	**Dangerous Venture**	*wes AYC*
—	3	2	**Dark Delusion**	*dr AY*
2	10	3	**Dark Mirror, The**	*mys-mel A*
—	7	10	**Dead Reckoning**	*mel A*
—	2	2	**Death Valley**	*mel-c AYC*
—	9	7	**Deception**	*dr A*
1	—	4	**Devil on Wheels, The**	*mel AYC*
—	6	3	**Devil Thumbs a Ride, The**	*mel A*
—	3	2	**Devil's Hand, The**	*fan A*
—	5	1	**Devil's Playground, The**	*wes AYC*
—	4	3	**Dick Tracy versus Cueball**	*mel A*
—	—	3	**Don Ricardo Returns**	*rom-dr A*
—	3	1	**Driftin' River**	*mus-wes AYC*
3	3	4	**Duel in the Sun**	*wes-c A*
—	2	11	**Easy Come, Easy Go**	*com A*
—	9	2	**Egg and I, The**	*com A*
—	1	2	**Escape Me Never**	*dr A*
—	4	—	**Extenuating Circumstances**	*cri-com A*
—	7	3	**Fabulous Dorseys, The**	*mus-biog AYC*
—	5	3	**Fabulous Suzanne, The**	*com A*
—	2	7	**Falcon's Adventure, The**	*cri-mel AYC*
—	2	5	**Fall Guy**	*mys-mel AY*
1	12	—	**Farmer's Daughter, The**	*com A*
—	7	3	**Fear in the Night**	*cri-mel AY*
—	1	2	**Fighting Frontiersman, The**	*wes AYC*
1	4	1	**Fool's Gold**	*wes AYC*
—	5	1	**Framed**	*mel A*
—	3	1	**Francis the First**	*fan AY*
—	2	1	**Fun on a Weekend**	*com A*
—	2	3	**Gas House Kids**	*mel AYC*
—	2	1	**Genius and the Nightingale, The**	*dr A*
—	6	2	**Gentleman Joe Palooka**	*com A*
—	1	3	**Ghost Goes Wild, The**	*com A*
—	1	3	**Ginger**	*dr AYC*
2	5	1	**Great Expectations**	*nov AYC*
1	5	3	**Guilt of Janet Ames, The**	*dr A*
—	3	1	**Guilty, The**	*mys-mel A*
—	2	1	**Gunman's Code**	*wes AYC*
—	—	3	**Hard Boiled Mahoney**	*mel A*
—	4	2	**Heldorado**	*mus-wes AYC*
—	2	4	**Her First Affair**	*dr A*
—	5	1	**High Barbaree**	*dr AYC*
—	5	—	**High Conquest**	*adv A*
—	7	—	**Home in Oklahoma**	*mus-wes AYC*
—	1	3	**Homestretch, The**	*dr-c A*
—	2	2	**Honeymoon**	*mus-com A*
1	8	9	**Humoresque**	*mus-dr A*
—	4	2	**I Cover Big Town**	*cri-mel A*

A	B	C		
—	3	1	**I Live as I Please**	*mus-dr AYC*
—	8	7	**I'll Be Yours**	*mus-com A*
—	3	3	**Imperfect Lady, The**	*dr A*
2	10	—	**It Happened in Brooklyn**	*mus-com AYC*
—	8	—	**It Happened on Fifth Avenue**	*mus-dr A*
—	3	4	**It's a Joke, Son!**	*com A*
7	8	1	**It's a Wonderful Life**	*dr AY*
—	4	8	**Ivan the Terrible**	*hist-dr A*
2	5	—	**Jericho**	*war-dr A*
—	1	3	**Jewels of Brandenburg**	*cri-mel AY*
1	6	3	**Johnny Frenchman**	*war-dr A*
—	8	8	**Johnny O'Clock**	*mys-mel A*
5	9	1	**Jolson Story, The**	*mus-biog-c AY*
—	1	5	**Jungle Flight**	*dr A*
—	1	3	**King of the Wild Horses**	*mus-mel AYC*
—	3	7	**Ladies' Man**	*com A*
—	1	3	**Lady Chaser**	*mel AY*
1	13	2	**Lady in the Lake**	*cri-mel A*
—	4	—	**Lady Surrenders, A**	*rom A*
—	2	3	**Landrush**	*mus-wes AYC*
2	11	2	**Late George Apley, The**	*nov A*
—	—	5	**Law of the Lash**	*wes AYC*
—	2	2	**Lawless Breed**	*mus-wes AYC*
—	1	3	**Lighthouse**	*dr A*
—	2	2	**Likely Story, A**	*com A*
—	2	5	**Little Iodine**	*com A*
—	4	4	**Little Miss Big**	*dr AYC*
—	9	8	**Locket, The**	*mel A*
—	—	3	**Lone Hand Texan, The**	*mus-wes AYC*
—	1	2	**Lone Star Moonlight**	*mus-wes A*
—	2	5	**Lone Wolf in Mexico, The**	*mys-mel A*
—	4	2	**Lost Honeymoon**	*com AY*
—	3	3	**Love and Learn**	*mus-com A*
—	8	5	**Love Laughs at Andy Hardy**	*mus-com AY*
—	5	8	**Macomber Affair, The**	*dr A*
—	4	2	**Magic Bow, The**	*mus-nov AYC*
1	10	5	**Magnificent Doll, The**	*hist-dr A*
—	1	5	**Magnificent Rogue, The**	*com A*
—	1	5	**Man from Morocco, The**	*mel A*
—	6	8	**Man I Love, The**	*mus-mel A*
—	6	5	**Man's Hope**	*war-dr A*
3	11	2	**Margie**	*com-c AY*
—	4	3	**Michigan Kid**	*wes-c AYC*
—	8	4	**Mighty McGurk, The**	*dr AYC*
—	1	4	**Millie's Daughter**	*dr A*
—	—	4	**Missing Lady, The**	*mys-mel A*
—	1	5	**Monsieur Verdoux**	*dr A*
—	7	4	**Mr. District Attorney**	*cri-mel A*
—	5	1	**Mr. Hex**	*mel AYC*
—	6	1	**Murder in Reverse**	*cri-mel A*
—	6	2	**My Brother Talks to Horses**	*com AYC*
2	13	1	**My Darling Clementine**	*wes AYC*
1	13	—	**My Favorite Brunette**	*com AY*
—	3	—	**Navajo Trail, The**	*wes AYC*
—	6	7	**Never Say Goodbye**	*com A*
1	4	11	**Nocturne**	*mus-mel AY*
—	3	13	**Nora Prentiss**	*dr A*
4	5	4	**Odd Man Out**	*dr A*
—	4	2	**Other Love, The**	*mus-dr A*
—	4	2	**Out California Way**	*mus-wes-c AYC*
—	—	4	**Outlaw of the Plains**	*wes AYC*
—	—	3	**Over the Sante Fe Trail**	*mus-wes AYC*
2	8	2	**Overlanders, The**	*dr AYC*
—	3	2	**Paris Frills**	*dr A*
—	6	9	**Perfect Marriage, The**	*com A*
—	—	5	**Phantom Thief, The**	*cri-mel A*
—	3	5	**Pilgrim Lady, The**	*com A*
—	7	3	**Plainsman and the Lady, The**	*wes AY*
—	4	9	**Private Affairs of Bel Ami, The**	*dr A*
—	10	4	**Pursued**	*wes A*
1	1	2	**Queen for a Night**	*mus-rom A*
—	—	4	**Queen of the Amazons**	*mel A*
2	4	—	**Raider, The**	*war-doc AY*
—	1	2	**Raiders of the South**	*mus-wes AYC*
1	4	1	**Ramrod**	*wes A*
—	3	1	**Range Beyond the Blue**	*mus-wes AYC*
1	11	5	**Razor's Edge, The**	*dr A*
—	12	2	**Red House, The**	*cri-dr A*
—	2	1	**Renegade Girl**	*mel A*
—	6	5	**Return of Monte Cristo**	*mel A*
—	1	2	**Riding the California Trail**	*wes AYC*

A	B	C		
—	2	1	**Rolling Home**	*dr AYC*
—	4	1	**Rustler's Roundup**	*wes AYC*
—	1	3	**San Demetrio, London**	*war-mel AY*
—	5	9	**San Quentin**	*mel A*
—	7	7	**Sea of Grass**	*wes-dr A*
1	12	5	**Secret Heart, The**	*mus-mel AY*
—	1	6	**Secret of the Whistler**	*mys A*
—	4	4	**Seven Were Saved**	*war-mel A*
—	2	5	**Shadowed**	*mys-mel A*
—	—	3	**Shadows on the Range**	*wes AYC*
—	9	4	**Shocking Miss Pilgrim, The**	*mus-com-c AY*
—	3	1	**Shoot to Kill**	*cri-mel A*
—	1	3	**Silver Range**	*wes AYC*
—	6	—	**Sin of Harold Diddlebock, The**	*com A*
—	12	3	**Sinbad the Sailor**	*adv-c AYC*
—	1	6	**Singin' in the Corn**	*mus-com AYC*
—	2	2	**Singing on the Trail**	*mus-wes AYC*
1	6	—	**Sioux City Sue**	*mus-wes AYC*
1	10	4	**Smash Up — The Story of a Woman**	*mus-dr A*
1	6	8	**Song of Sheherazade**	*mus-dr-c AY*
—	—	3	**Song of the Sierras**	*mus-wes AYC*
1	10	3	**Song of the South**	*car-c AYC*
—	3	1	**South of the Chisholm Trail**	*wes AYC*
—	2	4	**Stage Coach to Denver**	*wes AYC*
3	10	—	**Stairway to Heaven**	*fan-c A*
—	7	3	**Stallion Road**	*dr A*
—	1	3	**Stars Over Texas**	*mus-wes AYC*
—	5	3	**Stone Flower**	*fan-c AYC*
—	4	—	**Story of the Pope, The**	*doc AYC*
—	1	6	**Strange Holiday**	*mel A*
1	5	8	**Strange Woman, The**	*dr A*
—	10	7	**Suddenly It's Spring**	*com A*
—	2	4	**Susie Steps Out**	*mus-com A*
—	4	3	**Sweetheart of Sigma Chi**	*mus-com A*
1	6	10	**Swell Guy**	*dr A*
—	2	4	**Taras Family, The**	*war-dr A*
—	2	4	**Tarzan and the Huntress**	*adv A*
—	4	13	**Temptation**	*cri-mel A*
—	2	1	**Terror Trail**	*wes AYC*
—	3	8	**That Brennan Girl**	*mel A*
—	3	6	**That Way With Women**	*com AY*
—	4	4	**That's My Man**	*dr AY*
1	14	3	**13 Rue Madeleine**	*war-mel AYC*
—	2	3	**Thirteenth Hour, The**	*cri-mel AY*
1	9	1	**This Happy Breed**	*dr-c AY*
—	4	3	**Three on a Ticket**	*mys-mel AY*
4	11	3	**Till the Clouds Roll By**	*mus-biog-c AY*
—	1	12	**Time Out of Mind**	*nov A*
—	8	7	**Time, the Place, and the Girl, The**	*mus-com-c A*
—	6	6	**Trail Street**	*mus-wes AYC*
—	2	2	**Trail to San Antone**	*mus-wes AYC*
1	4	1	**Torment**	*dr A*
—	—	6	**Trap, The**	*mys-mel A*
—	—	5	**Tumbleweed Trail**	*mus-wes AYC*
—	4	2	**Turning Point, The**	*war-dr A*
—	1	2	**Twilight on the Rio Grande**	*mus-wes AYC*
—	4	7	**Two Mrs. Carrolls, The**	*mel A*
—	5	—	**Undercover Maisie**	*com A*
2	8	6	**Undercurrent**	*mel A*
—	4	4	**Unexpected Guest**	*wes AY*
—	3	4	**Untamed Fury**	*mel A*
—	—	4	**Vacation Days**	*mus-wes AYC*
—	3	7	**Vacation in Reno**	*com A*
—	1	2	**Valley of Fear**	*wes AYC*
—	12	4	**Verdict, The**	*cri-mel A*
—	4	1	**Vigilantes of Boomtown**	*wes AYC*
—	2	3	**Violence**	*mel A*
—	3	11	**Wake Up and Dream**	*mus-fan-c AYC*
—	7	7	**Wanted for Murder**	*cri-mel A*
—	1	2	**West of Dodge City**	*mus-wes AYC*
—	7	11	**Wicked Lady, The**	*dr A*
—	—	7	**Wife Wanted**	*cri-mel A*
—	—	4	**Wild Country**	*mus-wes AYC*
—	3	1	**Wild West**	*mus-wes-c AYC*
—	2	1	**Yank in Rome, A**	*war-dr A*
—	1	4	**Yankee Fakir**	*cri-mel AY*
7	10	—	**Yearling, The**	*dr-c AYC*
—	7	6	**Years Between, The**	*nov A*
—	—	3	**Youth Aflame**	*dr A*

The Consumers' Observation Post

(*Continued from page 4*)

HOW WELL ARE PRESCRIPTIONS FILLED by the pharmacists in your state? Connecticut inspectors in a drive to enforce the state's pharmaceutical standards recently made a spot check and discovered that 57 percent of the prescriptions were incorrectly filled, the inaccuracy being more than 10 percent. Some of the faulty prescriptions were reported to be a potential danger to patients; others were useless for their purpose.

* * *

BLEACHED FLOUR, the type that is commonly available for commercial and home-baking in the United States, has long been regarded with suspicion by CR and many informed nutrition and health experts. Reinforcement of the soundness of this position is given by reports of experiments by Sir Edward Mellanby, famous English nutritional researcher, in a recent issue of the British Medical Journal. According to the Mellanby experiments, running fits were produced in growing dogs by including in their diet flour that had been artificially bleached with nitrogen chloride. This process, known as the Agene process, is reported to be the one in general use in the United States for the production of bleached flour. The dogs recovered when the bleached flour was eliminated, and the malady did not reappear when untreated flour was included in their diet.

* * *

MANUFACTURERS ARE INCREASINGLY VOICING THE OPINION that high labor and material costs are resulting in pricing some electronic equipment "right out of the market," reports an influential trade journal. Many small radio sets are becoming an "inventory problem" to dealers because consumers show no desire to buy products that are too high in price for the quality of parts and workmanship offered. One important method for reducing manufacturing costs is to provide a greater degree of standardization of radio items, so that hand work in the factories and needless variety in gadgets and fittings can be reduced. The radio industry has been plagued from its beginning by manufacturers' disregard

Everybody seems to be planning to pile into the family car and go places this summer . . .

But before you head West or East or to points between,

Tell your friends to be sure to subscribe to Consumers' Research Bulletin!

They will find it extremely helpful if they are considering the purchase of some major piece of equipment such as a dishwashing machine, home freezer, refrigerator, automatic washer, gas or electric stove. Tests of makes currently available are under way and will be reported on in early issues.

THERE IS A CONVENIENT SUBSCRIPTION BLANK ON THE NEXT PAGE.

for obvious economies that can be achieved by elimination of unnecessary variations in design, particularly of non-essential parts. As CR has pointed out before, there are very few new or important developments in low- and medium-priced radios and little reason for maintaining high-cost production of non-standardized mechanical and electrical gadgets, parts, and arrangements.

* * *

NEW OR NEWLY AVAILABLE: Copies of a useful monograph on watches, prepared by the United States Tariff Commission, are now available to the general public for purchase from the Government Printing Office, Washington, D. C., at 40c. (A limited number of copies can be obtained by libraries and public institutions on application direct to the U. S. Tariff Commission, Washington 25, D. C.) Although this report is intended primarily to furnish background on the economic and tax problems connected with import duties on watches, it contains a great deal of information of interest to dealers and consumers who have a special interest in the characteristics of various types and grades of watches. There is a good discussion of watch movements and their construction, and of adjustments. Valuable information is also given on the various factors that determine quality in a watch movement.

Dippo Silver Cleaner (Interchemical Corp., Trade Sales Div., Fair Lawn, N. J.) is a widely advertised silverware cleaner, selling at 60c to 70c per package (8 applications). This product is asserted to clean silver in 10 seconds without rubbing ("you dip, rinse and wipe dry"). It has been analyzed and found to consist of (approximately) 30% soda ash, 50% slaked lime, with 20% water of hydration. In view of the high pH (alkaline activity) of the solution of Dippo as used, it is best that the silver which is cleaned in it should be handled in a way that the fingers do not come into contact with the liquid any more than necessary, and, of course, care must be taken that none of the solution or powder is splashed into the eyes.

Evergreen Soap (a product of Murphy Lab., Inc., Clifton Heights, Pa., sold in chain grocery stores and housewares departments at 25c for a 31-oz. glass jar) was found on analysis to be a soap solution with pine oil. The approximate composition was: soft soap (potassium oleate) 8.6%; free fat (oleic acid) 1.3%; pine oil 6.1%. The remainder (about 84%) was water.

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Transmission and Rear Axle Oils—
Should they be changed?

THE practice of changing oil in transmission, and in the differential or, more accurately, the "rear axle" is by no means just another "trick" to sell oil to car users; there are several reasons for changing the oil.

Over a period of use either in summer or winter the oil accumulates metallic particles, water (moisture), and some dirt which tend to break down the lubricant as well as increase wear. Thus a periodic change in lubricant (regardless of its grade) is generally desirable, especially in the rear axle with hypoid gears which most cars now have. (Hypoid gears are gears whose tooth design—required to reduce or eliminate the "tunnel" and hump in the rear floor—is such that a greater than normal amount of sliding between the teeth in proportion to the amount of rolling contact occurs. With these gears, there is a greater tendency toward abrasive wear between the contact surfaces than with ordinary gears.)

Other than this, the change from summer to winter grade or vice versa is a matter of viscosity, and of certain changes in viscosity with temperature. If summer-grade grease is used in cold weather, it congeals and permits "channeling" by the gears. In other words the gears cut pathways through the solidified lubricant and thus no oil flows over the tooth surfaces until the oil is warmed by the hot air from the engine that passes under the car and by the heat of friction between the tooth surfaces. Gear shifting is also difficult and may at times be almost impossible.

If a summer-grade oil is "cut back" with a lighter lubricant such as flushing oil, and the ratio of inhibitors, additives, etc., in the oil is thus changed, it may not be of much consequence, especially if a car is not driven hard. This has been done at times when light oils were not available, or rather when the driver was "caught" by a cold spell while on a trip, and could not readily reach a service station. In such instances kerosene was used on one occasion and a can of 10W on another (even gasoline was used once, although the latter is certainly not a method to be recommended). In all the cases referred to, however, a light grade of the proper type of transmission oil was put in as soon as possible.

If a winter grade of oil is used in summer, the viscosity becomes very low, with chances of damaging gear teeth by abrasion. In this connection it may be recalled that when hypoid gears were first introduced, the oil companies had no little difficulty in developing oils which would prevent abrasion. The problem has now been solved by the use of additives in virtually all axle oils. (Use of the same oil in the transmission is partly a matter of convenience in servicing a car.) Many cases of rear axle gear "burning" and pitting are due to inadequate lubrication, in some cases by carelessness of the garage men in checking the oil level, and in other cases the damage is the result of low oil level due to leakage.

If an owner drives only occasionally in winter and then only for short distances, and his summer-grade oil is in good condition, he can cut back the oil with one of a lighter grade. However, a more stable oil than flushing oil should preferably be used, such as SAE 10W or better yet 20W. About a pint should be sufficient for most transmission cases. The same dose may be used in the axle, but here the chance of damage is so much greater than in the transmission that a change to the proper grade of winter lubricant (SAE 80 or 90) is definitely to be preferred. In no case should summer oil be left "as is," in winter, in the rear axle.

The correct solution to the problem is always important, as transmission and axle gear friction must be kept as low as possible yet not too low, for the finely polished tooth surfaces will be endangered by use of a lubricant that is too thin and thus has insufficient load-carrying capacity.

1947 Automobiles

[*Continued from page 32*]

not offer improvements over other cars which the consumer now considers important are undoubtedly responsible. At present list prices consumers can purchase such tried and well-known "prestige" cars as the *Cadillac V8-61* and the larger *Buicks* and *Chryslers* for about the same money.

Buick

In general, the *Buick 40* and *50* appear to be satisfactory except for minor troubles. On the *Buick 70*, however, several reports have been received of excessive rattles, motor noise, hard steering, "poor roadability," and heavy oil consumption. On the other hand, some owners say they have found this car completely satisfactory.

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—Stanley Walker
N.Y. Herald Tribune

The answers to these and many other questions will be found in

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F. J. Schlink and M. C. Phillips

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"The old menus they have resurrected are something to make a mouth water and to sigh for a return of the days when one might follow a venison steak with a dozen stewed oysters, in the best hotel in town, for a total cost of 75 cents."

—N.Y. Sun

Do you

like to concoct gourmet dishes such as tripe a la lyonnaise or kidney stew?

You should be encouraged for they are full of valuable food substances. (See pages 58 and 152.)

have a guilty feeling when you concentrate on the meat portion of you meal and perhaps ignore the vegetables?

Don't worry! By eating a variety of meat, and meat fat, you can secure a diet containing all essential food requirements. (See page 76.)

prefer pork chops to vitamin pills?

You're right! Researchers have discovered that lean pork is one of the richest sources of Vitamin B_1. (See page 134.)

get that mid-morning tired feeling?

You probably should eat steak for breakfast — if you're one of those lucky people who can afford it. (See pages 142, 143.)

find unsatisfying the various "meat substitutes" such as baked beans, peas, vegetable chowders, or soybean and nut concoctions that are supposed to be just as good for you as meat?

Your instincts are sound! Vegetable proteins are deficient in certain essential amino acids. (See pages 76, 175, 176.)

have doubts about the superstition that "too much meat is bad for you"?

You're right! (See pages 69, 98, 176.)

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